MOOR BOAING

ANNUAL SHOW NUMBER



Elco **Motor Boats** 





This beautiful, seaworthy boat has comfortable berths for six; modern lavatory; a galley; a spacious cockpit for lounging. Equipment is com-plete. The big 50 H. P. engine plete. The big 50 H. P. gives 12 miles per hour.

#### Now you can have your Cruisette!

STANDARDIZED construction and quantity production not only make immediate delivery possible, but bring the price lower than asked for other boats of anywhere near equal size and comfort.

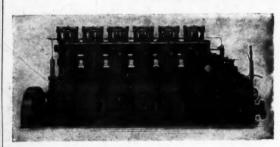
There is still time to get your Cruisette for a cruise to Write for Catalog MG or come to Port Elco and see the actual boat, just as she will be delivered to you.

Correspondence should be addressed to:

#### PORT ELCO - Division of Sales and Exhibit

RT ELCO — Division of Last 46th Street
247 Park Avenue and 107 East 46th Street
NEW YORK CITY Telephone Vanderbilt 2320 THE ELCO WORKS, BAYONNE, NEW JERSEY

#### STANDARD ENGINES



\$4,850 affoat at Bayonne, N. J.

Instead of purchasing the

Cruisette out of capital, many people prefer to

avail themselves of the

deferred payment

Elco

plan.

The STANDARD once installed gives years of comfort, service, satisfaction and pride of ownership. Follow the successful path of others and insure yourself the maximum of pleasure; install a STANDARD.

#### 135 H. P. STANDARD Oil Engine

The Standard Oil Engine (Full Diesel) Airless Fuel Injection. Low pressure air starting at low revolutions rapidly accelerates in speed or run at long stretches at low revolutions and light load. Maximum operative simplicity and fuel economy.

Built in sizes 90 to 300 H.P.



32-37 H.P. 4 Cylinder Gasoline Engine

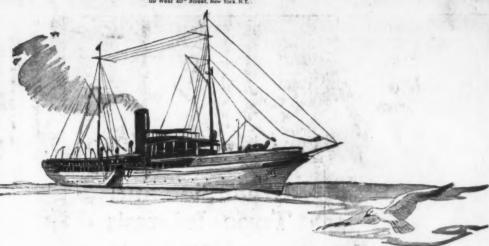
Write us your requirements.

Back of the STANDARD Fuel Oil and Gasoline Engines is the

STANDARD MOTOR CONSTRUCTION CO.

178 Whiton Street,

Jersey City, N. J., U. S. A.



#### THE SATISFACTION OF TEBO YACHT BASIN SERVICE-TO-OWNERS

THE care of fine yachts and their effective conversion and repair in the shortest possible time is the reason for the especially organized unit, the Tebo Yacht Basin.

Here craftsmanship of the highest quality and reliability finds its fullest expression from complete conversion to delicate cabinet work.

The satisfaction of the owner is guaranteed.

#### TODD SHIPYARDS CORPORATION

Plant of Tebo Yacht Basin Co.

Foot of 23rd Street, Brooklyn, N. Y.



Shipbuilders and Repairers
Engineers—Boiler Makers
Diesel Engines and Diesel Engine
Installation—Parsons Turbines
Oil Burning Equipment
Electric Drive Installations





MoToR BoatinG, January, 1925. Volume XXXV, No. 1. Published monthly at 119 West 40th Street, N. Y., U. S. A., by International Magazine Co., Inc., Yearly subscription price: United States, \$3.00; Canada, \$3.00, Foreign, \$4.00. Entered as second class matter April 15, 1900, at the Post Office at New York, N. Y., under the act of March 3, 1870. Additional entry at the Post Office at Albany, N. Y. (Printed in U. S. A.)



Advertising Index will be found on page 30;

#### WRIGHT TYPHOON

MARINE ENGINE

"Time and the Passing of the Years . . ."

Virgil

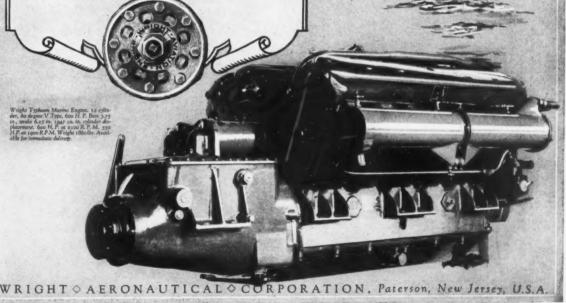
Time is the necessary element in the production of any fine mechanism.

Time-to perfect a capable organization.

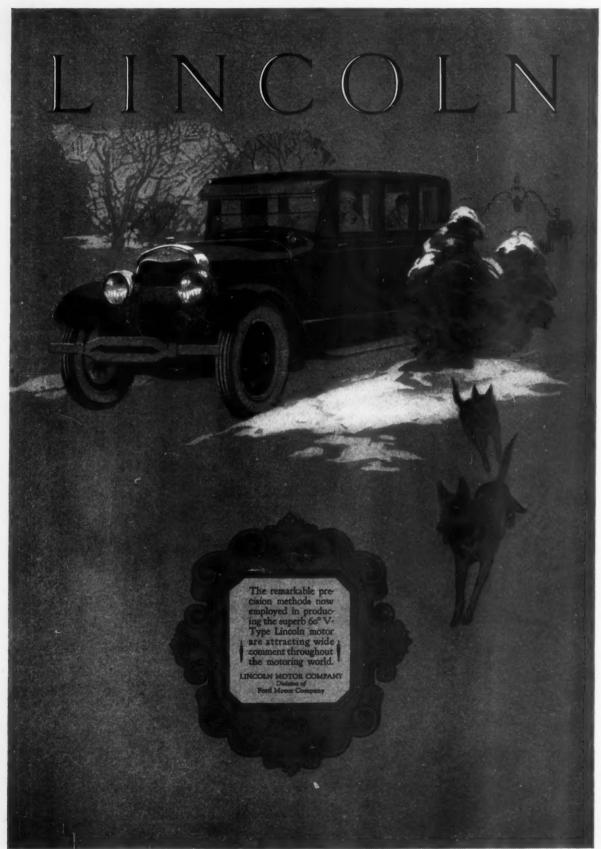
Time—to gain by a wide experience in years of production, the necessary fundamentals of quality and performance.

Thus has Wright, in offering the Marine Typhoon Engine for the 1925, season, been preparing and building for the past 25 years for its outstanding success.

WRIGHT AERONAUTICAL CORPORATION



When writing to advertisers please mention MoToR Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York



Advertising Index will be found on page 394

Steel or Wood
Construction

## **YACHTS**

Finest of Yacht Workmanship



THE modern fully equipped plant and the spacious yard facilities of the Defoe Boat & Motor Works offer to the yacht designer a boat building service that is par excellence. All Defoe employees are skilled artisans in boat building. They are intelligent men, who work in harmony with the architect and faithfully follow his instructions.

We build boats in either wood or steel construction and in any desired size. Our plant is centrally located and being near the source of supplies not only assures quick completion of work, but also enables us to figure low on all work.

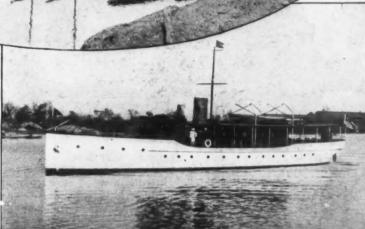
May we quote on your plans?



Our plant and yacht basin with a fleet of Defoe-built boats.

Above, Reomar III, built for R. E. Olds. Power— Twin Mianus 120 H. P. Diesels.

Windsor II, built fo. G. W. Mcgeath, Power— One Bessemer Atlas 140 H. P. Diesel,

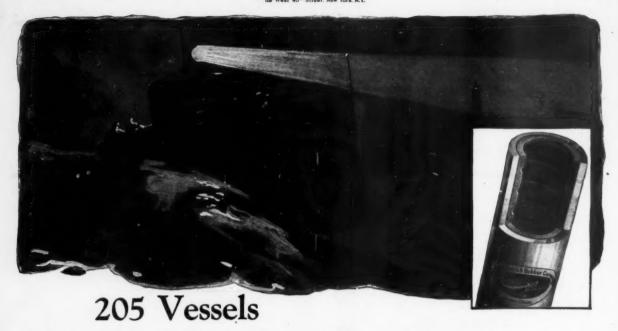


#### **DEFOE BOAT & MOTOR WORKS**

IEFFERSON ST.

BAY CITY, MICH., U. S. A.

When writing to advertisers please mention Motor Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York



## of the New U. S. Coast Guard Patrol are equipped with Goodrich "Cutless Bearings"

The adoption of this water-lubricated, rubber-surface bearing as standard equipment is right in line with the Government's policy to attain the utmost in seaworthiness and efficiency.

This means a substantial widening of the fleet's field of action. "Cutless Bearings" with their surface of tough Goodrich RUBBER far outwear bearings of babbitt, bronze or lignum vitae. Shaft scoring is practically eliminated; speed and smooth silent running are increased, as the rubber

absorbs much of the screw's vibration. Boats remain longer in service, dry-docking and repair delays are cut down.

Water is the only lubricant used by "Cutless Bearings." It flushes through a helical groove cut in the rubber bearing surface and removes particles of sand or grit which damage bearing and shaft.

"Cutless Bearings" are in wide use on every conceivable type of craft—powerboats, tugs, schooners, tankers, etc. Write for full details.

Approved by the American Bureau of Shipping

IMPORTANT—The following reputable agents have "Cutless Bearings" in stock. Others are being rapidly appointed ' BOSTON, Walter H. Moreton Corp. and United Fisheries Company. GLOUCESTER, MASS., United Fisheries Co. NEW BEDFORD, MASS., Hathaway Mach. Co.

Made only by THE B. F. GOODRICH RUBBER COMPANY, Akron, Ohio ESTABLISHED 1876

## Goodrich Cutless Bearings

"BEST'IN THE LONG RUN"

Advertising Index will be found on page 30\$

# Specify Specify FEC. U.S. PARIOTE FEC. U.S. PARIOTE FOR THE PARIOTE F



See OTE
TEXTASOTE
TEXTASOTE
Active
Active
BOAT
BOAT
SHOW
SHOW
SHOW
Grand Central Palace
Grand Central Palace
71.). Jan 2-10

awnings
spray hoods
deck canvas
boat covers
hatchways

see over

# Specify JENASOFE

#### See TEXTASOTE at the Motor Boat Show

Grand Central Palace - New York - Jan. 2nd - 10th

-BOOTH 36-MEZZANINE FLOOR-

When fitting up your boat this Spring don't overlook Textasote!

Already this new processed duck is recommended by architects, boat builders and owners generally as a great labor and time saver, and a comforting surety of lasting satisfaction.

Textasote will not leak even when subjected to water pressure far greater than could possibly occur in use. Textasote does not rot. Equipment made of it will last much longer than if ordinary duck were used. It is soft and pliable--easy to tailor and lay.

Textasote is wanted for so many different purposes that we make it in many weights and colors. For awnings--blue, green, red, orange and tan made with the same color on both sides, or different on each. For spray hoods and dodgers, boat covers, bridge screens, weather cloths, and for building decks, tans and grays are supplied.

Visit our exhibit at the Motor Boat Show. If you can't get there, investigate now--by sending direct to us for samples and explanation of why it has proven a sensation.

#### THE PANTASOTE COMPANY, Inc.

11 Broadway

New York City

PANTASOTE, the most famous, most durable fire-resistant artificial leather—ideal for Yacht cushions and upholstery.

RUSSIALOID is less expensive but will stand long, hard service for the same purpose. Write! Large samples of Textasote will be sent to any builder, architect or owner on request.



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## Install a

FOR the mental comfort that Wisconsin's sureness gives you—the certainty that no "tinkering" need mar your play-day jaunts or business trips—

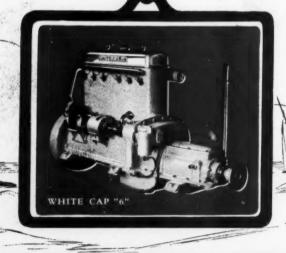
For its instant, heartening answer to your open throttle—a spirit born of hair-balanced nicety and engineering rightness—

For the added years of power-assurance that Wisconsin represents—the longer motor-life built in by close-tolerance

shop standards-

For its extra power per cubic inch of piston displacement —

Install a Wisconsin—and better your boat.



WHITE CAP "4"

WISCONSIN

Advertising Index will be found on page 301



Waen writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 19th Street, New York

#### BETTER in ANY BOAT

ISCONSIN White Caps, as well as the "A-M", show, throughout their design, much thought for the owner. In no instance have economies in manufacture or assembly influenced design to the owner's inconvenience.

The entire valve operating mechanism of the White Caps is quickly accessible by simply removing the aluminum cover over the cylinder head. Oil strainer and oil pump are mounted for convenience' sake on the timing gear housing. No piping connections need be disturbed in removing the oil strainer for cleaning.

Reverse gear is equipped with hand-hole for easy adjustments. Propeller shaft thrust is absorbed by double-row ball bearing directly back of reverse gear, in separate cage. Oil leakage is amply guarded against, and removal is possible without disturbing reverse gear or housing.

> All accessories are easily adjusted without dismounting other parts.



#### Specifications

#### WHITE CAP "4"

Bore, 4 in. Stroke, 5 in. Number of cylinders, 4. Piston displacement, 251.2 cu. in.

Horse Power, 25 at 850 RPM. 31 at 1000 RPM. 38 at 1200 RPM. 42 at 1400 RPM.

Paragon reverse gear. Bosch high tension magneto with impulse coupling. Leece-Neville 12-volt electric starter and generator. Propeller shaft coupling for 1¼-inch shaft. Bronze water circulating pump, gear type. Waterwater circulating pump, gear type. Water-proof spark plugs. Stromberg carburetor. Wiring. Oil pressure gauge. Thermostatic water temperature control.

PRICE \$795.00

#### WHITE CAP "6"

Bore, 3%-in. Stroke, 5-in. Number of cylinders, 6. Piston displacement, 268.3 cu. in.

Horse Power, 32 at 1000 RPM. 43 at 1400 RPM. 53 at 1800 RPM. 60 at 2050 RPM.

Paragon reverse gear. Bosch high tension magneto with impulse coupling. Leece-Neville 12-volt electric starter and generator. Propeller shaft coupling for 1¼-inch shaft. Bronze water circulating pump, gear type. Waterproof spark plugs. Stromberg carburetor. Wiring. Oil pressure gauge. Thermostatic water temperature control. carburetor.

PRICE \$995.00

#### "A-M"

Bore, 4¾-in. Stroke, 5½-in. Number of cylinders, 4. Piston displacement, 390 cu. in.

Horse Power, 32 at 800 RPM. 40 at 1000 RPM. 48 at 1200 RPM. 54 at 1400 RPM.

Paragon reverse gear. Bosch high tension magneto with impulse coupling. Leece-Neville 12-volt electric starter and generator. Propeller shaft coupling for 1¼-inch shaft. Bronze water circulating pump, gear type. Waterproof spark plugs. Stromberg carburetor. Wiring. Oil pressure gauge.

PRICE \$1095.00

#### New Discounts to Boat-Builders!

Write us today, on your business letterhead, for our radically different proposition for 1925.

Wis-Motor Mfg. Co. Milwaukee, Wis. Send me data on mo-tor to power this boat Length. draft type of boat

JKEE

Advertising Index will be found on page 304



The

### HORACE E. DODGE BOAT WORKS

BUILDER OF THE DODGE WATERCAR

Announces the appointment of

#### Mr. GEORGE F. CROUCH AS VICE PRESIDENT

Effective December 1, 1924



Mr. Crouch is without doubt the nation's foremost authority on naval architecture in the speedboat and runabout class. The acquisition of his services by the Horace E. Dodge Boat Works is indicative of that company's determination to be excelled by none in the manufacture of light, speedy and dependable boats.



#### A Good Boat Made Better

The exceptional success of The Dodge Watercar the first year—the enthusiastic commendations that came from every section of the country where the boat was seen—did not deter the Horace E. Dodge Boat Works in its policy of continuous improvement.

This year the boat is even better. The new oiling and water circulating systems are far superior to those found in the ordinary runabout.

Self bailers have been installed, eliminating bilge water as fast as it forms and keeping the interior entirely dry.

These bailers require no attention whatever from the operator and serve a threefold purpose. In addition to keeping the boat dry, they materially increase the speed and improve riding qualities by lowering the bow and raising the stern. Owners are already reporting speeds in excess of 20 miles an hour.

Every boat enthusiast admires the beauty and staunchness of The Watercar. The power of the motor—a standard Dodge Brothers marine engine—the ease of control, the comfort of the seats, the symmetry of the lines, all bespeak the builder's determination to produce the finest and most dependable boat of its class.

In consideration of the quality, the price is absurdly low. Ask your Dodge Brothers dealer about delivery dates.

See The Watercar at the Motor Boat Show, New York, January 2-10. The exhibit is at the left of the main entrance.

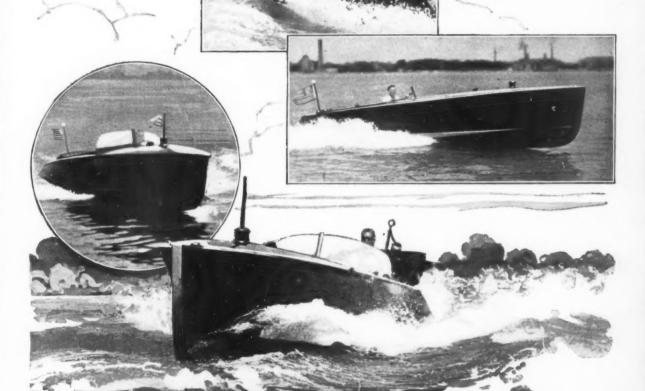


HORACE E. DODGE
INCORPORATED

AAADETROIT, U.S.A.A.

Advertising Index will be found on page 304

atercar



BOAT WORKS

CALAGRAGAGAAA

When writing to advertisers please mention MoToR ROATING the National Managine of Motor Roating, 139 West 10th Street, New York



A corner of the Dodge boat plant showing about five days' production of Dodge Watercars.



BOAT is one of the few things in the world which can not be stamped out by machinery. No matter how thoroughly standardized a boat may be, it is still a hand made article.

Boat building is an art that demands the skill and touch of expert craftsmen. To build fine boats on a production basis, men are more essential than machinery.

The Horace E. Dodge Boat Works has gathered together an organization of the finest artisans available. Certainly the Dodge Watercar attests the skill of these men. And now, under the direction of Mr. Geo. F. Crouch, even higher attainments may be expected from this plant.

Unusual facilities are offered for the designing, development and building of special racing craft and speed boats.

HORACE E. DODGE BOAT WORKS, INC.

DETROIT



A Glimpse of the Chriscraft Invitation Race During the Gold Cup Regatta

## When You Overhaul Install Champions

When you overhaul in the next few months be sure and install dependable Champion spark plugs in your engine.

Whatever type of boat you have Champions will assure you better service because Champion has definitely proved in thousands of tests that it is the better spark plug.

It is better because of its double-ribbed sillimanite core, its two-piece construction and its special alloy electrodes.

Make certain you get genuine Champions. They will actually save their cost in oil and gas.

Champion Spark Plug Co. Toledo, Ohio Champion Spark Plug Co. of Canada, Ltd. Windsor, Ont.



There is a dependable Champion for every engine.

## CHAMPION

Dependable for Every Engine

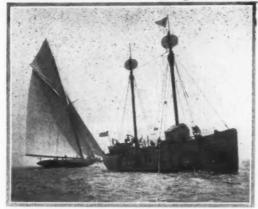
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ANNUAL

Power Squadrons, following their practice for



Sir Thomas Lipton will soon challenge again for the America's Cup and these scenes will be duplicated



SHOW NUMBER

**JANUARY** 1925



VOLUME XXXV No. 1

THE United States

#### CONTENTS

the last several years, will	CONTENTS
give a course on Piloting.	
Semanship and Small Boat	Cover Design by G. C. Pearce
	Sentinels of Our Coast
Handling, consisting of ten	Huck Says, Yachtsmen, Obey That Impulse
or twelve illustrated lec-	The Coast Guard's Navy28-29
tures on this interesting and	Topas a New Jewel
important branch of the	A Sub-Chaser Takes Its Easc
	The Certainty of Power
sport. The lectures will be	A Modern Idyll of the Sea
held on Monday evenings,	The Shore Rendezvous 34
beginning January 19, 1925,	The Motor Yacht
at 8 o'clock sharp at the	Wig Wag, A Smart Commuter 31
City Club House of the	Neccesities
	Skylark II, A Beamy Cruiser
New York Athletic Club,	Beneath the Southern Cress. 40-43 Adastra in the Channel Isles. 44-46
59th Street and Sixth Ave.,	Facility Day
New York City. The meet-	Outboard Motoring Through the Panama Canal
ings and lectures will be	Minken, A Twin Screw Cruiser
open to all male yachtsmen	Cyrene, A Comfortable Houseboat
	Outboarder
and motor boatmen. There	Correctly Planking The Boat
will be no charge whatso-	Taormina, The Complete Yacht 56
ever. At the completion of	Ocoee, A Smart Houseboat Cruiser
the lecture course, individ-	Speed—Spray—and Action
ual instruction will be pro-	Fleetwood III
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vided for those students	A New Sport in South Africa 64
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The dates and subjects of	Pixie, A V-Bottom Row Boat
the lectures follow:	Skimmer, A 11/2 Liter Hydroplane
	Small Motor Boats, Their Care, Construction and Equip-
January 19. Rules of the	
Road Made Easy, Hints on	Prize Question No. 1: Taking Care of The Outhoard
Boat Handling, Proper	Engine
Whistle Signals.	Work
	Scripps Drives Them Fast
January 26. Lights for All	The Finest Six Yet
Classes of Boats and How	America's Leading Marine Engine Builders85-86
to Show Them.	Carl Fisher's One Design Class
February 2. Government	
Navigation Lights, Aids to	An Improved Red Wing
And Barron Lights, Aids to	Prints as the market for Osea Dones

Navigation, Distress Sig-nals, Fog Signals, Day Marks; Types and Uses of Buovs.

February 9. Equipment-The Legal Requirements for All Classes of Boats, Gov-ernment Publications; Flags and Colors and How to Fly Them.

February 16. The Com-

February 23. Compass Errors and How to Apply Them.

March 2. Reading and Interpreting the Chart, How Charts Are Made and What to Look for on Them—Meaning of the Symbols and Marks.

March 9. Navigating and Piloting Instruments—

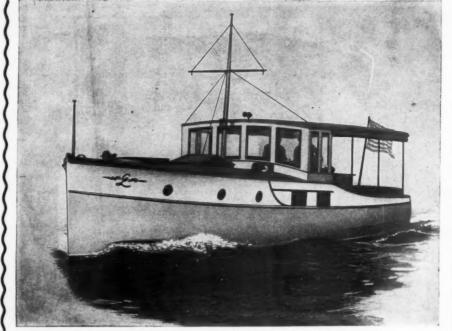
March 16. Tides and Currents, Navigation Problems.

March 23. Individual Instruction.

March 30. Individual Instruction.

The Brooklyn Squadron will also conduct a series of navigation, lectures somewhat similar to the above. These will be held in the Central Branch of the Y. M. C. A., Brook-lyn, N. Y., on Tuesday evenings, beginning January 20, 1925.

MoToR BoatinG is published monthly by the International Magazine Company, Inc., William Randolph Hearst, president; C. H. Hathaway, vice-president; Ray Long, vice-president; Joseph A. Moore, treasurer; Austin W. Clark, secretary, 119 West 40th St., New York, N. Clark, secretary, 119 West 40th St., New York, N. Clark, secretary, 120 West 40th St., New York, N. Clark, secretary, 119 West 40th St



Great Lakes design and workmanship, at its best, easily makes this the outstanding cruiser value at

\$7500

## The New 36 Foot

TS roominess is as pleasantly startling as its small price When you picture its completeness, beauty and comfort you suspect this cruiser of revolutionizing boating values; when you see it you know it has done just that!

Footer in 36 Feet You step down the companionway into the spacious cabin with its richly upholstered lounge seats which make up into four real beds. Meet that husky, open-air appetite over the big mahogany table—right handy to a thoroughly equipped galley. There is a full length mirror in the forward door and full length closet space. A cozy room, indeed—6 feet 6 inches long and 9 feet, 6 inches wide. Plenty of head room—6 feet, 3 inches—and lots of light and ventilation.

The guests are royally provided for as well. There's a forward stateroom—two berths with three drawers beneath each and a 2 foot, 4-inch dresser for good measure. Splendid light and ventilation by means of four portlights and overhead hatch. Lavatory, between main cabin and forward stateroom, makes it privately accessible.

The big canopy-protected, windshield-fitted cockpit seats a dozen people with provision for sleeping two more. A real home to take family and

friends where ever you please.

Write today for complete specifications

GREAT LAKES BOAT BUILDING CORPORATION, Milwaukee, Wis.



The well balanced arrangement plan, showing the roomy comfort of the Great Lakes "Sea-Villa."

Advertising Index will be found on page 304

## SENTINEL of Our Coasts

By F. W. Horenburger Guardians of The Navigator's Safety Occupy Dangerous Positions and Give Ufailing Aid in Darkness and Storm

FIRST among the sights to greet the travelers returning to America's shores, and more particularly the region of New York, after a sojourn in Europe, is that famous lightship off Nantucket Shoals. A most welcome sight this is too. For some it signals the fact that within a comparatively few hours they will again be able to set foot on solid ground. To others it means an early return to loved ones, and to the turmoil of our modern life. These outposts of our new civilization are also the first to greet the new immigrant approaching our shores in awe and anticipation of the fortune in store for him.

The safe approach to our shores in all

weathers is made possible by the carefully planned arrangement of lighthouses and light vessels. A vessel in clear weather is warned of the presence of a light from 20 to 25 miles before it reaches it.

Forcey Rocks, off the coast of Florida, one of the most exposed structures in the lighthouse serv-



Photographs— Courtesy of the Bureau of Lighthouses



Cape Lookout Shoals light vessel stationed in the Atlantic off the North Carolina Coast

The light at Cape Henry, just outside of Norfolk, one of the most conspicuous landfalls along the coast



lights are so arranged that in passing along the coast under normal conditions, a ship will be continuously in the zone of one or more lights. The characteristics are further varied, so that they can be readily identified and the ship's position

properly checked.

Naturally it is the aim to have the lights visible for as great a distance as is possible. It will be seen that this distance depends on several factors, those of greatest importance being the intensity of the light, and its height above the sea. this reason all of the important lights will be found to be very high, and, if possible, placed on naturally high ground. The curvature of the earth serves to cut off the rays from a light, so that we understand a light to have both a luminous and also a geographic range. The candle power of the lamps will determine the distance to which the rays of light will penetrate under normal atmospheric conditions. The strength of the light atmospheric conditions. is generally such that there will never be any question of the ability of the light to penetrate further than it would be possible to observe it,

due to other reasons. Conditions of fog and haze, which frequently exist at sea, hamper the visibility of lights to such an extent that their usefulness is often greatly

restricted.

The known laws which govern the distance at which a light is visible are quite precise. In fact, a ship in approaching the shore can determine how many miles it may be from the light, when first observed, by carefully noting its first appearance. A simple computation, or a reference to a table will then give the result. All charts and light lists, which give any particulars about lights, will invariably give the height, and since the observer is ordinarily assumed to be 15 feet above the sea, the visibility in nautical miles can be tabulated.

The highest light along the coasts will be found at Cape Mendocino, Calif., which is 422 feet above the high water mark. This gives it a visibility of about 28 miles, quite enough to warn the sailor of his approach to land. Quite obviously, a white light will penetrate to a greater distance than a colored one, and where it is necessary to provide a difference in the appearance of lights, a suitable variation is introduced

by flashes of greater strength, or by occulting the light.

Montauk Point on the tip of Long
Island, guards the approach to New
York, via both Long Island Sound
and the Atlantic Ocean

A light which flashes is arranged with specially constructed prisms, which concentrate the light into straight beams which are the visible flashes. An occulting light is one in which a shutter or screen is caused to travel around the light, obscuring it at definite intervals which are predetermined. The mechanism for handling this is generally some form of clock work driven by a heavy weight, which operates by gravity on a rotating drum. Combinations of fixed, flashing, and occulting lights are arranged in order to give almost any conceivable combination of light effects to permit recognizing the station. Naturally (Continued on page 286)





most



e of the big lights Hawaii, at Kilauea Point



The best way it is to put the trunk over on one side of your room and then standing over on the other side you hurls everything out of your dresser what it looks right at the moment

# Yachtsmen, Obey that Impulse

And Go to MIAMI BEACH This Winter

#### Full Directions as to How to Pack and How to Act

ELL Chap by the time you prints this wheeze I shall probably be stuck in the sand somewhere on the coast of Florida, trying the old stuff of taking four foot draft over a three foot spot. Doubtless they is a lot of yachtsmen what reads MoToR Boating what has never been to Miami Beach. I proposes to give them the facts. I hasn't any land to sell and I doesn't operate no hotel down there, so my word, it is reliable-like. For the last sixteen years I explores Florida from the St. Marys river to Key West and from Pensacola to the Mayport Jetties, so I knows what I is talking about when I says to go to Miami Beach. Of course if you has reached that age where you has a heavy bay window and gets exhausted

swinging a putter and you is rotten with money and you has a wife what weighs one hundred and eighty pounds net and gets her chief enjoyment changing her clothes and waddling around and prying into everybodys business, you goes to Palm Beach and joins the Pleasure Buyers Society. But if you is young and able bodied, male or female, tall or short, provided your ratio of pounds to the horse power, it is low, and if you likes to get on or in the water and if you dances for three hours without getting spavined, Miami Beach, it is the place where you should go and go broke.

As the time it is getting short, I advises you to get your railroad accommodations at once. You doubtless decides to go on the Florida Special because it has a stenographer

Then anybody can come in what wants to and you can lay in the tub and tell them where your wallet is and they takes whatever they pleases

aboard what you never uses and a lot of other facilities what you likes to think of, so you goes down to the ticket office and you says to the agent "Give me a stateroom on the Florida Special."

He looks at you cold-like and says as how they was all taken for the season three months ago. You swallows hard and says, "All right give me a lower berth." He now knows you is a boob and shows it and allows as how they is no berths on that train until after April first, at which time they takes it off anyway. You

then gets mad and decides you goes to Florida if you walks and you says to him, "well howthehell does I get there?" He tells you he sells you a nice upper berth in the end of the car on train number 63. He says this train it leaves New York at the convenient hour of 3:46 A. M. and it stops at all the stations so you gets a swell chance to see the country. You takes it, but later on you finds that they is usually a lot of reservations what is given up at the last minute and the day before you leaves, you succeeds in getting a upper berth on the Florida Special, which aint so bad, considering.

Now the next thing you does is to decide on the hotel. The three big hotels, they is the Fleetwood, the Flamingo and the Nautilus. You writes to them, or to one of them and they writes back and tells you that they is all filled up until April first when they closes. All you has to do is to write back and tell them that you isn't interested in their troubles, that you arrives on a certain day and that you expects them to put you up, which they usually does. If they doesn't they is a lot of A1 smaller hotels down there where you gets in all right. I never has heard of a case where anybody slept out in the park unless he was so full of Cuban aleahol that he wasn't able to call a taxi in which case it would be all right anyway.

Then you gets out your wardrobe trunk. If you doesn't own one, you goes down town and buys one. They only costs a hundred dollars or so and you thus gets into practice.

I have no suggestions to make to a lady yachtsman because I doesn't know nothing about feminine clothes whatever, except whether they looks okay when they is on and if you is a man, it don't do any good to tell you what to pack, because whatever you takes it will be wrong anyway. The best way it is to put the trunk over on one side of your room and then standing over on the other side you hurls everything out of your dresser what it looks right at the moment. Then you takes this pile and stuffs it into

the trunk as rapid as possible. When you gets there you doubtless finds you forgets the vest of your tuxedo, you gets the pants of last summers suit mixed with the coat that you buys two years ago. They looks almost caractly alike when they is off but when they is on, they is of an entirely different color and the coat it has a moth hole the size of two bits in You leaves bethe elbow. hind one of your sport shoes and when you arrives you finds that the other, it has gone right through the crown of your straw hat. The best way to take a straw hat is to carry it in your hand but I urges you not to wear it to the station as it is non

O Fate, as they says in Parus, to wear a straw hat in New York in January. You must not forget to leave out enough stuff to carry in your suitcase, because your trunk, you cannot carry it in your berth. The chances are you forgets your tooth brush and your pajamas. They is one delicate matter what I feels is necessary to mention because so many men they knows so little about the laws. The Volstead Act it does not permit you to carry intoxicating liquor in your trunk and I am positive that they is no way to pack a bottle of whiskey successful so it doesn't break or make a gargling noise. Every once in a while I hears of some nitwit what loses not only his licker but his trunk thiswise and of course I feels that this is his just dues. If you puts this stuff in your suitcase, the chances are that it falls out on the floor and breaks anyway or it leaks on your only clean shirt and the other passengers they looks suspicious at you and sniffs.

Now you takes the train. You notices that they is several young women aboard what is not hard on the eye. You wonders if they calls the conductor if you speaks to them. If you proceeds wrong you gets nothing but the glassy eye so pay attention sharp to what I tells you. You mustn't walk up and down the aisle trying to look like Santa Clause everytime you goes by them nor does you get any welcome if you acts like as if you was a timid deer and had just robbed a bank. Your best chances they is at the opposite ends of the train, in the dining car or on the observation

platform. When you goes to the dining car, if you is at all clever, you probaby con-(Con. on p. —)



The nigger walks in and he says to the elephant. "Why Tonay you bad boy, what you all think you is doing?"

## The Coast Guard's Navy

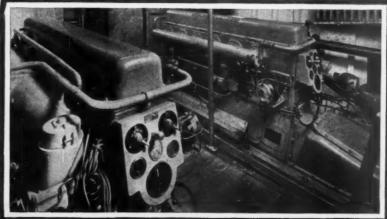




One of the most convincing arguments which have been brought to bear on the smuggling question

A pair of the new Coast Guard eype Sterling engines whose work seconds that of the persuader A N event of importance and ill omen for a class of law breakers, whose occupation is becoming increasingly hazardous was the recent launching of the first of the new fleet of patrol boats for the United States Coast Guard. C. G. 100, as this craft is officially designated, is one of the 75 footers built by the Mathis Yacht Building Company of Camden, N. J., who, with a number of other prominent boat builders along the coast, are engaged in turning out a vast number of these vessels. The design of all these boats is identical, and they are heavily and substantially built. Neither money nor effort have been spared to produce a boat which will be speedy and able under all conditions of sea. They are intended to go out and stay out, taking what comes in the way of weather without protest.

This class of boats are being powered with the new Sterling Coast Guard engine which develops about 200 h.p. on a bore of 61/4 inches and a stroke of 73/4 inches. The trials which were made on the Delaware River were intended also to furnish data as to the capacity of several different sizes of



propeller. The Hyde Windlass and Columbian Bronze Corporations had supplied a variety of wheels and successive trials were made in order to determine which were the most suitable. Valuable data on the performance of boats, engines, and wheels was obtained, which fully confirmed the figures of the designers and builders of both the boats and engines.

As is natural when a building program of this magnitude is undertaken under rush orders, the most prominent boat builders and accessory manufacturers were the ones on whom the burden of the work was placed. Hardly a manufacturer of marine equipment has been omitted from the long list of those who contributed in one way or another to the successful completion of this work.

The outboard bearings on these boats have all been fitted with the new types of Cutless bearings, which have recently been developed, and successfully introduced by the Goodrich Rubber Company of Akron, Ohio.

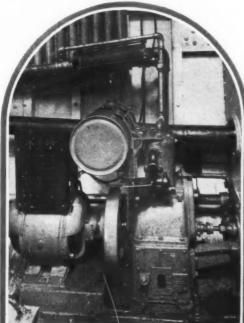
Another important item is the safe provision for carry-



The test stands where ten of the big Coast Guard engines can be tested at one time. Note the inclination which corresponds to the angle of the setting in the hull

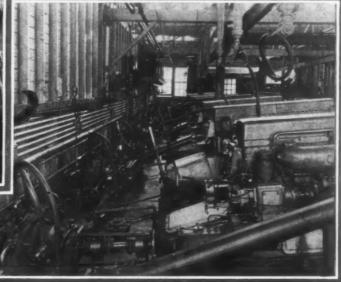
ing fuel, oil, and water. This big task was successfully undertaken by L. O. Koven & Brother, Inc. in their big Jersey City plant. They have prepared and manufactured the many tanks which are built into these boats, and their tremendous facilities enabled them to turn out this large volume of work, with the least possible delay. The heating installation was undertaken by the American Radiator Company, and an Arcola heater and complete radiator equipment was quickly supplied and as quickly installed. Since these boats must necessarily be out under all conditions of the weather, this item of equipment will be very essential, and also much appreciated.

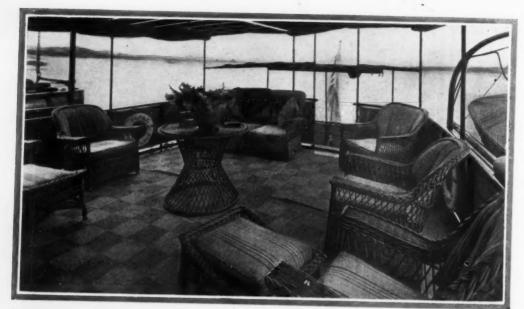
The decks on these boats are (Continued on page 246)



The Globe auxiliary generating set which handles the lighting of the Coast Guard cutters, and above a section of the American Radiator Company's heating system

Another view showing the water dynamometers and prony breke testing systems for determining the horse power output of the Sterling engines





The luxurious after deck of Topaz provides abundance lounging space for the owner and guests. The easy chairs invite one to linger and enjoy their restfulness \*

## TOPAZ a New Jewel

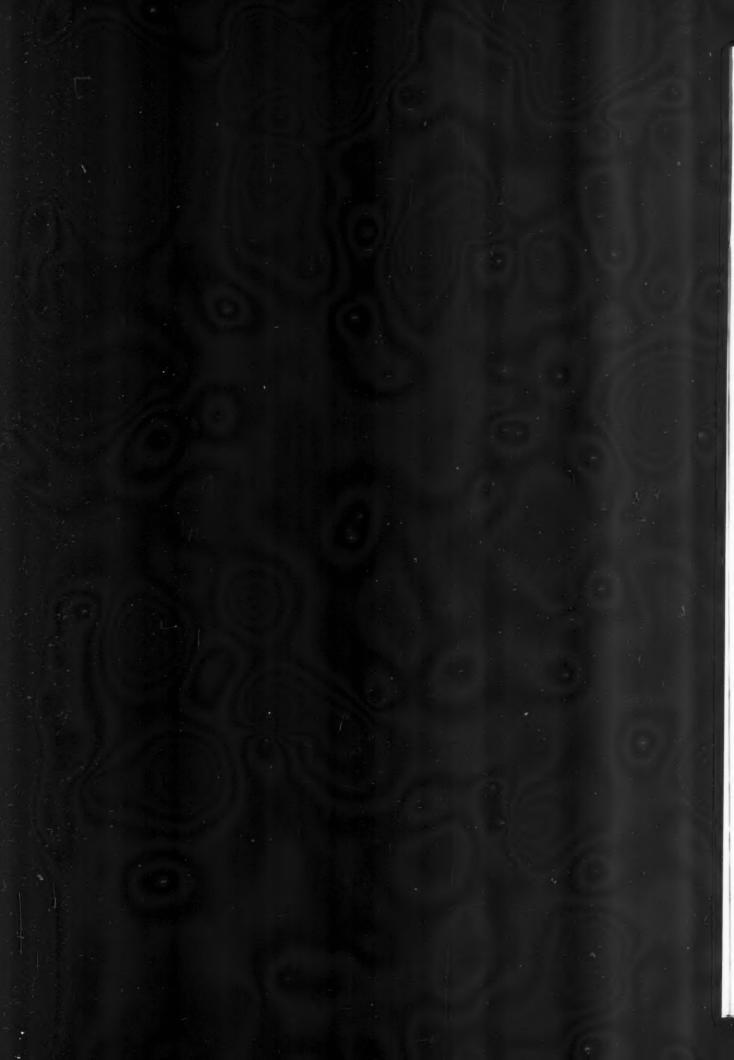
Spacious Craft of Heavy Construction Driven by Twin Gasoline Engines

Topaz was built for J. Richmond Fales, by the New York Yacht, Launch and Engine Co., and is 82 feet in length. 82 feet in length. Her construction is exceptionally heavy, and no detail of comfort has been overlooked. She is handled from the pilot house forward, while the living eventure was in the deck quarters are in the deck house and below



The power plant is a pair of six cylinder Twentieth Century engines of 100 h. p. which drive her 12 miles. In addition an ice machine, electric plant, and pumps, etc., will be found in the engine room. Tank capacity of 700 gallons is provided for fuel







#### A SUB-CHASER TAKES # EASE

An unsung heroine of the U-boat war, converted to peaceable pursuits, loafs placcidly among her frivolous sisters



#### Che CERTAINTY & POWER

The engine idles as the boat swings in against the tide, but the bow hand makes fast and the stern man holds his warp



#### A Modern Idyll of the SEA

Sleek, well-groomed craft, lying to moorings in their cove, ready at a touch of the finger to run the miles down

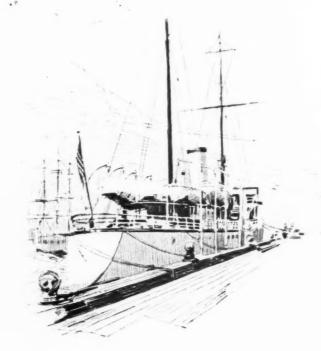


### SHORE RENDEZVOUS

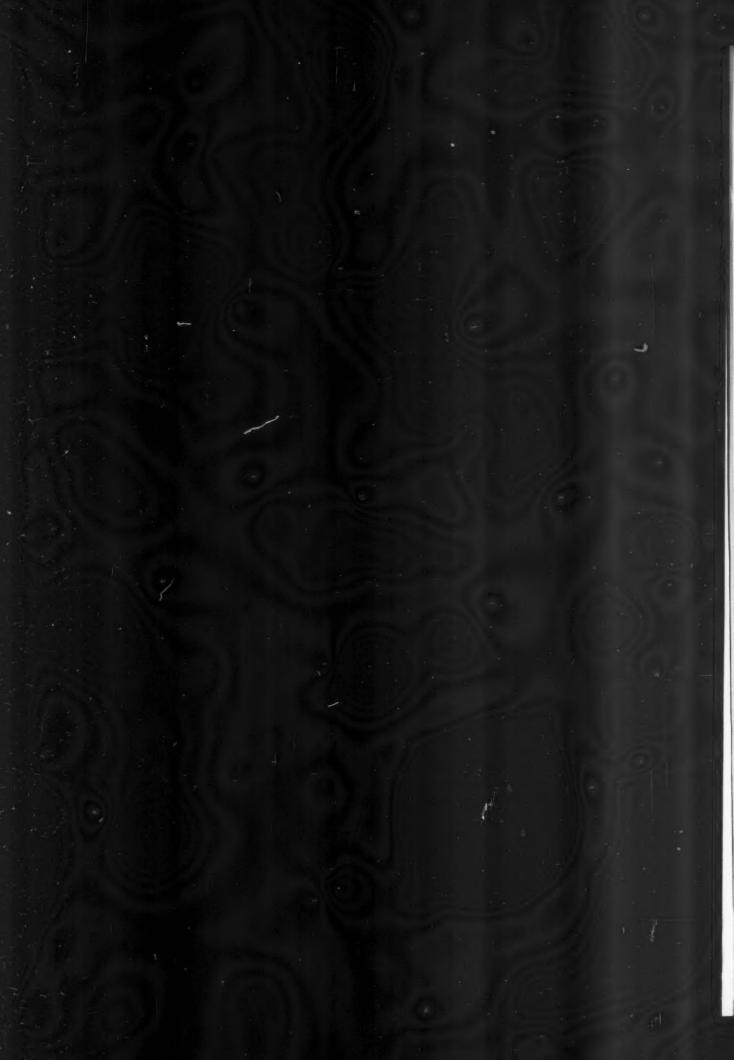
On land, but of the sea, the club-house forms the hub of the boatman's amphibious existence

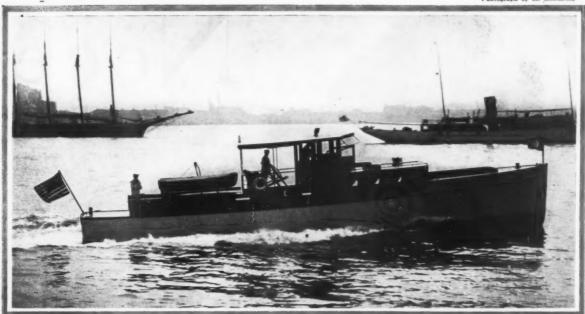
### Motor Yacht

Gone the spars and cordage of the full rigged, ship, but in its place a resolution only a shade less stately









The new 62-foot express cruiser Wig Wag used by Brigadier General Borden in commuting between Rumson, N. J., and New York

# Wig Wag, A Smart Commuter

A T many meetings where prominent yachtsmen gather, one has heard whisperings about the new fast ferry of Brigadier General H. S. Borden. This boat has aroused much interest among yachtsmen, and there has been little variance in their criti-

cisms concerning the appearance, general utility, and speed of the new Wig Wag. The unanimous opinion of ell who have seen and inspected the new boat is that she is the mest

boat of her size ever completed.

Brigadier General Borden is a very enthusiastic yachtsman, and a member of the New York Yacht Club. His home is in Rumson, N. J., and during the summer months he commutes from his home to New York City every day. His former commuter, also known as Wig Wag, was similarly designed and built by the Consolidated Shipbuilding Corporation, and equipped with Speedway engines. This boat was a smart 55 footer, which made the trip from Rumson to New York in a little over an hour's time. From observation of the new Wig Wag under full power, it will be easily observed that she is able to make this Rumson to New York trip in even less time than the former boat.

Feeling the need of a new boat of a little greater capacity, both in accommodation and speed, the new Wig Wag was built with an overall length of 62 feet. Her beam was made 10 feet 6 inches, while the draft was kept to 3 feet. The striking difference between this new boat and other boats in her class is the fact that her decks are absolutely clear. Another conspicuous feature is the entire absence of port lights in the raised deck section, which is very unusual in this type of boat. The entire raised deck

An Admirable Design Resulting from the Thoughts of an Experienced Yachtsman and Built for Fast Ferry Service section, with the exception of a chain locker forward, is devoted entirely to an observation cockpit. Comfortable seats upholstered in leather are arranged at the after end with two bucket seats facing forward. An entrance to this cockpit may be made from either

cockpit may be made from either the port or starboard sides. The trunk cabin follows in the stern, and is built entirely of mahogany with four plate glass windows on each side. Entrance to the deck house is on the bridge on the starboard side. Two extension transom berths are arranged forward, with a toilet room and wardrobe aft. The bridge deck on top of the trunk cabin follows. The steering wheel is of the horizontal type, with a complete system of engine room telegraph controls. The trunk cabin aft encloses a pair of six cylinder, 7 by 8½ inch, 300 h.p. Speedway engines, which drive the boat at a speed of better than 30 m.p.h. Quarters for the crew are arranged astern of the engine compartment, which is also arranged with a galley, toilet space, berths and lockers for the crew. Steps from the crew's quarters lead upward to the after deck.

Wig Wag has proven to be an admirable design and reflects the wisdom of the experienced yachtsman. There is nothing about the boat, either exterior or interior, which is not completely shipshape, and about the whole boat there is a feeling of security, reserve power, and an entire absence of useless decoration, accessories, and otherwise. Wig Wag was designed and built for General Borden by the Consolidated Shipbuilding Corporation, and its successful operation adds still one more to the continually growing

list of new and successful craft.



Should the Father Yield Family? An Unusual Father Finally Wins Spoiled Son

HAT was the way of it, Edward Vance told himself as he glanced across the table at his son, Marshall, before replying to the lad's impertinent question. Children were bundles of selfishness passing themselves off as human beings. Marshall was just finishing high school. This fall term was his last. In another month he would be nineteen years old.

nineteen years old.

Vance let his eyes wander about the table, from one to the other of the faces of his family. (olinne, the elder of his two children, was the replica of her mother in looks. The light brown eyes and hair, the wide forehead, the slightly prominent cheekbones. But here the resemblance ceased. Colinne was energetic to the point of restlessness. She possessed both initiative and executive ability. In one of his rare visits to her room, one day, Vance had found her engulfed in billows of cloth. He had been aware, of course, that she made most of her own clothes, but an activity on such a scale had astounded him. A glance through the open door of her closet had disclosed dozens of dresses on hangers. Marshall puzzled Vance a good deal.

The lad had the gray-blue eyes, the crisp, sandy hair, and the powerful physique of the Vances, and the temperament of his mother. He was energetic up to a certain point, when spurred by the novelty of enterprise, but his main characteristic was a certain dreaminess of temperament, amounting to almost stubborn-

ness. In all his life, Vance had never known a male who could be as slow at execution as Marshall, his son. It took him, for instance, twice as long to dress as it did his sister.

As Vance trans-

As Vance transferred his gaze from his son's face to that of his daughter, he noted the hard line that had crept

When he tiptoed down the back stairs to the kitchen to make himself some coffee and toast, he found Marshall there in his shirtsleeves. The percolator was bubbling on the stove, and the electric toaster was glowing in the middle of the table



his temperamental irascibility, that he had begun to wonder if they were not right. Emma, his wife, had started it, years ago, and the children had taken it up. His temper had become the byword in their immediate circle of relatives and friends. It even extended to casual acquaintances.

The aloofness of his neighbors, Vance knew, was due to this. He reflected upon this state of affairs, cynically, but with no little measure of regret. Emma, his wife, was of the type that ignored causes. She reacted only to results. It seemed to him that she was ever ready to condone her own mistakes and slips of the tongue, but never the flashes of temper they aroused in him. So, quite naturally, his children had come to regard Vance as an unreasonable element, whose presence had to be endured for reasons of convenience.

With these things in his mind, his tone in answering Marshall's sullen observation that "he didn't see why he couldn't have a small runabout when all of his friends could," was more than usually harsh. It made him furious to be forced to make an explanation as to his solvency.

"The two hundred and fifty dollars which you are asking me to put into this plaything, Marshall, is needed for other things. If you wish to know, specifically—the annual premium on my life insurance policy is due in two weeks."
"But you don't have to pay cash, I told you," Marshall

reiterated, doggedly, "Sanders said he would take your note for ninety days."

Vance laughed harshly. Sanders, the dealer in second autos, evidently had more respect for him than his family had.

"I never buy anything unless I can afford to pay cash for it," he told his son in a tone of belligerent finality.

"No!" Marshall stormed, "that's why we never have anything.'

Vance felt his face growing purple. An dered in his eyes. Anger smol-

"We have a house-a car, cottage at the beach, suf ficient to eat and drink, all the clothes that are neces-

"Oh, - necessities!" "Oh, yes, — necessities!" Marshall interrupted, with the scornful complacency of

Vance laid down his knife and fork. His eyes were blazing now. "I don't work eight hours a day in a bank to supply you th luxuries," he replied, icily. "If you want this car, get with luxuries," he replied, icily. a job and earn the money.

"I will!" Marshall retorted, "I'll quit school. I wanted to all the time but you wouldn't let me," he reminded

Vance. "I'll see Burns about a job tomorrow—I'll—"
"You will finish your term," Vance interjected, his voice rising.

"I won't!"

"Edward! Marshall!" Mrs. Vance's face wore the expression of a martyr. Colinne looked up from her plate. She shot her father a glance eloquent with contempt.

'Dinnertime in this house is always a signal for a quarrel," she remarked, with an oracular emphasis, which her mother, if she had possessed as keen a sense of humor as she possessed an appreciation of it, would have recognized as a flagrant plagiarism of herself.

Vance turned upon his eldest in a blaze of fury.
"This is my affair," he reminded her. "I didn't ask for

your opinion, Colinne!"
"Suppose then, you settle it somewhere else—instead of at the table," she retorted hotly.

The implication was as unjust as it was impertinent in view of the fact that Marshall was responsible.

Her mother's eyes warned her. Not with reproof, however, but with a martyred supplication that only added fuel to the flames.

"I don't care!" Colinne flared back at her mother. She

gave Vance a scornful glance, "if he wants to quarrel, why don't he pick some other time except mealtimes?

Vance, now besides himself with fury, brought his fist down upon the table, and glared about it at the three members of his family arrayed against him.

'As the head of this house, I have the right to object to unnecessary and wanton expense, I believe,' he said, in a voice hard as steel.

'Sure!" Marshall gibed, "like the yawl you bought yourself three years ago. Eighteen hundred dollars for an old boat you don't use more than half a dozen times a year!'

Vance's face turned from purple to ashen. The yawl referred to was his one and only luxury. He owned a car which only his family used, a beach cottage which was always full of his children's friends, and a house where he slept and ate, only because his income was insufficient to maintain a separate establishment.

His real home was aboard his yawl. The boat was the realization of a twenty year old dream. In his young days Vance had been a sailor. One of his choicest possessions was an age-stained master's certificate nearly a quarter of

was an age-stained master's certificate nearly a quarter of a century old, in the bottom of his safe deposit box.

He still loved the sea. Not with the romantic love of youth, but as a weary child returning to the bosom of its mother after a long, long absence.

At the age of forty-eight, and after a business career, which, measured in the terms of earthly possessions, most men would consider successful, but which he, himself, knew to be the ghastliest of ghastly failures he found an eleventh to be the ghastliest of ghastly failures, he found an eleventh

hour nepenthe, along trails of the wandering tides, an eloquent sympathy in the sea, and in the sea's sky. The offshore wind singing through the rigging of his yawl brought back to him the forgotten dreams of his youth, and some of the faith of youth, but for the loss of which he would still be young in spite of his fortyeight years.

Hardly able to contain himself, he laid his napkin on the table and arose. His first impulse was to cross to the side of his son, and drag him from the table to the privacy of the den for corporal punishment, but he

restrained himself at the thought of the scene with Emma, his wife, which would follow such a course, as it always did.

He observed with the faintest of ironical smiles, the white face of Marshall, opposite. That the boy knew that he had gone too far was evident by his expression. He sat gripping the table with both hands, cowering before the wrath which he knew was due him.

Without a word, Vance pushed his chair back and left the table.

the table.

As he walked upstairs to his room, he heard his wife say to Marshall in a subdued voice:

Knowing your father's temper, couldn't you have waited to ask him for the money until after dinner, out of consideration for your mother and your sister?"
"Aw, he's just an old crab!" the boy replied, sneeringly.

"That's all the more reason why you shouldn't pick a fight with him at the dinner table," Vance heard his daughter say.

His jaws came together with a snap. He wanted to leap down the stairs and tell this family of his what he thought of them. To sweep the table clear of its expensive silver and cut glass—too expensive for their limited means—to tell his wife what he thought of her perfidy in setting his children against him, and the children what he thought of them for their cold, calculating selfishness. But again he restrained himself. He had learned, long ago, the futility of words on such occasions. He would only make a blustering ass of himself, once more. (Continued on page 268)

A THRILLING STORY

the sea is full of the thrills of an exciting battle

with the elements. Superior skill in boat

handling under difficult conditions make pos-

sible the salvage of a dismasted vessel and the

rescue of the crew. The discipline and training

of the sea do much to mould the character of

Marshall, the son of Edward Vance, and

change him completely. The final part of

Necessities next month will entertain and please

you immensely.-Editor.

The next part of this remarkable story of



The bridge deck is enclosed and constructed of matched mahogany. The house is 15 feet long and is used as a dining saloon



### Skylark II a Beamy Cruiser

Roomy Craft Powered with Two Motors-Substantially Built to Meet All Cruising Contingencies

NE of, the newest cruisers added to the fleet of the Detroit Yacht Club is Skylark II, built by the Defoe Boat & Motor Works of Bay City, Mich., for George Harrison Phelps of Detroit, from designs by John L. Hacker. Skylark II is a 55-foot cruiser and is powered with a pair of medium-duty 45 h. p. Wellman-Seaver-Morgan engines which can drive her comfortably at 12 miles. Her construction is substantial and durable. Cedar planking has been used which is copper fastened throughout and her equipment includes, among other



items, a 32-volt Delco plant, inter - communicating telephone system, as well as a

radio telephone equipment. The bridge deck is enclosed and constructed of beautifully matched African mahogany, finished in natural color. The bridge deck house is 15 feet long and is used as a dining saloon. A comfortable seat of berth size, with box springs, is placed in the aft end of the deck house.

Quarters for the owner and guests are very large and contain built-in berths and furniture

# Beneath the Sout

### Part V

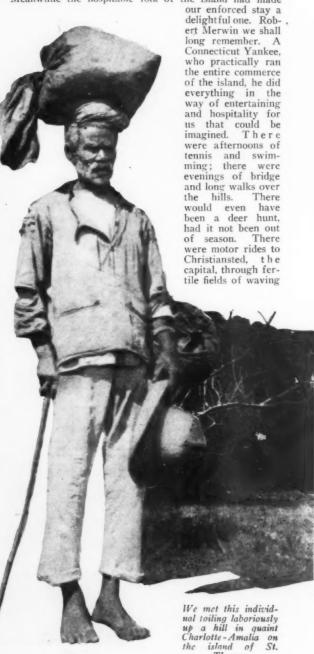
Photographs by the Author and John B. Drake, Jr.

An adventure voyage which began at Atlantic City has proceeded as far as the Island of Porto Rico in previous installments. The Captain and crew of the little 47-foot motor boat have thoroughly explored the islands in the Bahama group, and are now on their way to the Leeward Island group in the Caribbean Sea. They have journeyed to Guadeloupe in the French West Indies, and will continue their story in succeeding installments.

The skipper taking a movie in the French West Indies. The deep gutters of the street, filled with running water, may be seen in the foreground

TE HAD planned to stay two days at St. Croix. We stayed two weeks, because old Father Aeolus in league with Neptune, willed it. For two weeks, night and day, it blew a living gale. At Fredricksted, in the lee, it was calm, but beyond the points, the seas were running mountain high, and the wind whipped their crests into smothers of foam. Every other night or so we would make an attempt to get out, but each time were forced to give it up and return.

Meanwhile the hospitable folk of the island had made



Thomas

## HERN CROSS VAN CAMPEN HEILNER



Guadeloupe is very French. One might almost think himself in a provincial town of France were it not for the tropical adaptations

cane, with the landscape dotted with the ruins of the old wind mills when all St. Croix ground her cane by that power.

In many of the fields stood curious little stone huts, like dog houses. These were known as watch houses where women who were working in the fields might go to nurse their babies. And there was the grave of Alexander Hamilton's mother, over which Gertrude Atherton, the authoress, had erected a tombstone. Christiansted was very picturesque with its old fort and quaint build-



Here was born Josephine, creole wife of Napoleon, empress of the French

ings. Here we saw one of the oldest ships in the world, the Vigilante, still in service. She was said to be nearly two hundred years old, although her authentic records ran back only a hundred and fifty years. She had been first a slaver, then a privateer, then a Danish man o' war, and then for over fifty years a mail packet between Christiansted and St. Thomas. She had at last sunk to the level of carrying cattle between Fajardo, Porto Rico, and St. Croix. The owner told us only a part of her original keel remained.

In the course of a tour to South America which Roosevelt made, he stopped at the Virgins and visited with Mr. Merwin. In discussing the purchase of the Virgins, Merwin had pointed out to him that it would cost no more than a battle-ship to purchase the Virgins, the maintenance



Wherever we tied to a dock we were the constant object of curious throngs. One island mistook us for a whale when they first sighted us. Above: St. Croix in the Virgins

UN YACHT MINUSCULE

Un bruit de moleur.

nne. « Negetihe » est commandé pur Le « Negetihe » est commandé pur les citais de l'ampène « Il vient de Phient de l'arriver à Fo-b-de-France, il Avant de l'arriver à Fo-b-de-France, il fait escale à la Guadioupe.

Les passagers du bateau minuscule accomplisseut un toyage touristine; aut tour de n ême, avrir l'autaur pour un format de n ême, avrir l'autaur que dans une si fragile embarcation !

(Translation)
A TINY YACHT
A sound of motors. Persons
standing near the Custom
House Friday at 16 o'clock
admired a craft flying the
American colors which was
anchoring a few meters from
shore.

He it had minus one could

If it had wings one could have mistaken it for the landing of some new kind of sea-plane.

The Nepenths is commanded by the captain, Campone Helner and contains 5 men. He comes from Philadelphia. Before reaching Fort-defrance, he stopped off at Guadeloupe.

The passengers of the tiny boat are accomplishing a sight seeing trip of the Antilles.

One must really have American audacity to cross the Atlantic in such a frail craft! -La Paix, Fort-de-France, April 11, 1923.

Danish, while the natives, who come mainly from the English islands, speak English. The natives are very polite, tipping their hats to the whites wherever one Prohibition struck the island hard and we felt sorry for them. St. Croix rum was famous all over the world, and they were not allowed to manufacture it even for export. The rum was usually made out of waste cane or bagasse. If a planter's cane field burned up, the burned cane could always be used for making rum. Now it was a dead loss. It seemed unjust to us.

While lying at St. Croix, we started a swear fund. For every good round oath uttered on board, the culprit was forced to deposit five cents in a box. the end of our cruise we had collected nearly fifteen dollars. Our intention was to use the proceeds for a dinner in Trinidad. When we came to open the box, there was nothing in it! Everyone accused everyone else, but just who the vandal was will forever remain a mystery. Perhaps the writer in a fit of absentmindedness may have taken

it. If so, he apologizes to his crew. At quarter to twelve before Easter, just when we had all made up our minds to buy real estate and settle



A typical creole. The dress is of brilliant colors and the madras about the head of still more vivid hues. Note the French heels

the U. S. had a fairly good with It must be remembered that the Virgins belonged to Denmark for nearly two hundred and fifty years. The currency is still that of the National Bank of the Danish West Indies, in francs and bits, though the islands belong to the U. S. The majority of the plant-

ers are Danes and speak



Bluebeard's Castle at St. Thomas. Here the legendary ogre was supposed to have decapitated eight fair damsels of his choice

down, we slipped away from St. Croix under a late moon. The seas for the first time in two weeks had subsided perceptibly, and we made good headway, although a heavy ground swell was running. It was a night of diversity, filled with rain squalls, rough seas and calm ones. Along in the dog watch when Billy D. and I were alone on deck, and the others asleep below, we thought it was hailing, but this could not have been so. We were thankful for the rain; it beat down the seas.

A gray dawn, with no land in sight, we scanned the horizon anxiously for it. We were trying to pick up Saba, the outlying sentinel of the Dutch West Indies. About nine o'clock, however, we espied the top of it sticking above the clouds, about truenty miles distort the season. twenty miles distant, and through a heavy cross sea ran up until we got under its lee. We fully intended to stop at Saba. It was one of the curiosities of the West Indies. A volcanic cone rising nearly three thousand feet abruptly from the sea, it is perfectly round at its base, not PATENT DE SANTE. a cove or harbor presenting itself. Nous John August Uddenberg.

Agent Consulaire de France a St. Christophe.

Le yacht heparthe II

Appelé

THE AMERICAN DOMINICAN CONVENTION 1987. RECEPTORIA DE LAS ADUANAS DOMINICANAS

DELEGADO RECEPTOR

SAN JUAN HARBOR BOARD

Trum Heilner

MARTINIQUE

SERVICE SANITAIRS

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Consulaat der Mederlanden -TE-St. Thomas, West Indic.



GEZONDHEIDS-PAS.

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THE UNITED STATES OF AMERICA Hoitner DEPARTMENT OF COMMERCE

CLEARANCE OF VESSEL TO A FOREIGN PORT

ED, ST. CROIX.

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L Robert L. Marwis

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send greeting Juan, P. R., Mar. 13 , 1923 85/100 DOLLARS

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LICENCE DE DEPART t do Fore-do-Franco la navira Mefacutha II

MARTINGUE NEPUBLIQUE FRANCAISE NUMEROME MINISTERE DES COLONIES PATENTE DE SANTÉ

at St. Croix, V.I.

Directeur de la sante a Fost-de-France (Martin-rifions que la balimerer cl-apres designé part dans les conditions aujurantes : ACubuchés II. Janks dans dans designé part

Only a small portion of the vast number of documents and papers necessary to take a little motor boat through the West Indies

The people live in the bottom of a crater at the top, and curiously enough their town is called Bottom. round and 'round the island, but could find no place to land. A heavy surf surged against the rocks on all sides and there was no beach. A flight of steps cut in the rocks showed where ascent might be gained to the town, but where a boat might land there was no trace. A large mooring buoy lay offshore, where perhaps the infrequent mail came to anchor, but that was all.

We were told the Sabans built some of the finest boats in the Indies. I do not believe it. Unless they threw them off the cliffs, there is no place to launch them. The top of the island was wreathed in mist and it appeared to be raining up there. Our arrival caused a sensation and we could see the people through our glasses running along the goat-like trails and staring down at us.

But we could not stop, and waving farewell, we headed out into the heavy chip-chop once more for St. Eustatius, twenty miles further on. Here we arrived and came to anchor in a perfectly open road- (Continued on page 268)

Borough of Spring Take

New Bermy

December 6th. 1922 To whom it may This 1- to certify that VanCampen Neilner has not been

arrested or in Jail for the past five years, Asva Thier of Police.

Borough Clerk.

### ADASTRA

in the

### Channel Isles

By Alfred F. Loomis



Storms and Gales Make An Enforced Stay at St. Peter Port Interesting—While Unusual Currents in the Channel Add Unexpected Thrills to the Cruise

### Part VI

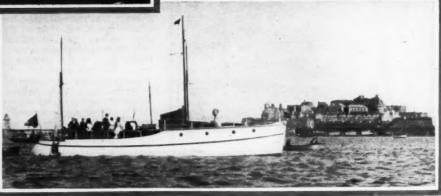
The cruise of the yawl Adastra has taken us to many interesting and unusual places of interest along the English Channel. Leaving the Isle of Wight the voyage went northerly along the English Coast to Falmouth. Here a trip across the channel was made with visits to many attractive islands along the French Coasts. Further experiences of the cruise will be related monthly in Mr. Loomis's entertaining way.

A FTER a day's run through heavy fog and a night's anchorage among the rocks of a lee shore, there is only one logical thing to do when a sheltered haven is finally gained. And that is, tear a page off the calendar, sink down on a bunk, and sleep until the last throes of starvation wake you up.

But when P. L. and I arrived with Adastra in St. Peter Port, Guernsey, after such an experience, we changed the program. Not having had any recent news of our only son and incipient heir whom we had left behind in England, we propped our eyelids open and staggered ashore to the post office. There was a letter there from every concern in New York which cherishes the delusion that first-class mail advertisements are read by the irate recipients—but no word from the nurse at

Victor Hugo Cave, on the island of Serk. The entire coast is honeycombed by the action of the sea

The motor yacht Lucina, with Castle Cornet in the background, St. Peter Port Harbor. A woman and her two daughters comprise the crew of Lucina



Southampton. So we wired and waited and ate, and by the time a reply came saying that the baby was as right as rain, we were both too tired to sleep. We called it Sunday for Barkham as soon as he showed signs of wanting to polish the brass, and for ourselves we made it a day of yarning and yawn-

Vice-Commodore A. L. Elliott of the Royal Channel Islands Yacht Club came aboard with a challenge to race against his cutter to the neighboring island of Serk; and he and subsequent acquaintances told us some-thing about these Channel Islands. They are undoubt-edly bad. Two of the half dozen yachts that were then in port had happened on foggy days for the Channel crossing and both of them had missed Guernsey. same thing had occurred within recent weeks to a flotilla of British destroyers, while it is not unusual for

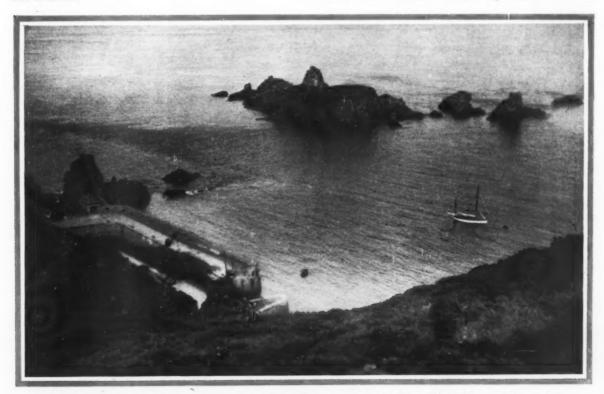
the regular Channel steamers to be turned back to England by a combination of fog and wind.

It is no wonder, then, that the vast majority of yachtsmen omit Guernsey from their cruising calculations, and that those who do go there have a bond in common. This bond is not only a sense of achievement but a knowledge that they have won through to an inner haven of charm and loveliness.



Two of the crew of the French beam trawler Irrawaddy fight a fifty-mile wind in running out a kedge in St. Peter Port Harbor

The afternoon following our own arrival had hardly set in when Mr. Elliott in his cutter Merlin was underway and jockeying about the harbor awaiting us. Hurrying through our lunch, we made sail, weighed anchor, caught the wind on the port tack, and stood out beyond the breakwaters. There had been no fog since the one that ushered us in, and the day was clear and bracing, with a refreshing wind from the northeast. Such a day with such a breeze



The Villainous anchorage at Les Laches, with Adastra lying to a warping buoy and Barkham rowing a stern line ashore to a ring bolt. The tidal harbor of Le Creux is seen in the foreground

would have been ideal for our Channel run, but would have given us an under-estimate of the difficulties that surround the islands.

Merlin coming after us, we both jibed over and laid a course for the detached rock at the southern end of Serk which is known L'Etac de Serk. M as Most of the rocks and ledges in the vicinity have French names, but you don't have to speak the language to avoid them. If you are a stranger you see one looming up to port and you say, "That's bad, no matter what they name it." Then you sight one to starboard and you call it worse. After that a third shows up dead ahead and you say, "That's good night." From there on you

The Moulin Huet water lane on Guernsey, a distinctive feature of the island scenery



the currents, it was sucked almost under. When we saw the tide boiling around it we were glad that there was plenty of wind to combat it and a motor in reserve.

Once clear of that reef it was plain sailing to L'Etac de Serk, with Merlin hanging close to Adastra's quarter, but with Adastra standing off to give a good berth to a submerged ledge A good berth is a favorite phrase with seafarers, but when P. L. asked me how much it is, measured in yards, I had to define it loosely. And Barkham agreed with me that a good berth is enough and maybe a little too much, but never too little for safety. The distance varies according to the width of a passage or the character of a shore, being never less than twenty feet nor more than twenty miles.

While I was explaining all this to P. L. my mind wandered from sailing (I was at the tiller at the time), and when I looked up Merlin had cut a corner and was showing us the thin edge of her rudder. As we ran free up the eastern side of Serk Adastra closed up a bit, but before we had overtaken Merlin it was time

to start the motors and enter Les Laches.

If you happened to be in a very generous frame of mind on a calm morning, you might call Les Laches a harbor. It consists of a shallow bight in a high shore, and is open from northeast around to south-(Continued on page 268)

La Coupee, the natural causeway 300 feet high and about ten feet wide at its top that saves Serk from being two islands. L'Etac de Serk, a detached rock, is seen in the background



watch chart and water with the eye of an eagle and never lose track of your position for an instant.

Even though we were accompanied by Merlin whose owner and paid hand know the waters intimately, I spent half my time over the chart, and left the sailing to P. L.—which was a canny move, as she is always

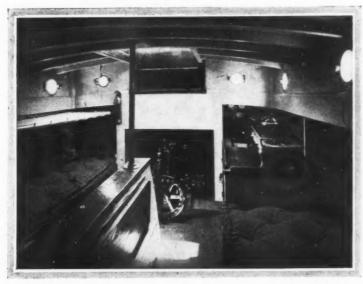
able to get more out of a boat than I can. Midway between Guernsey and Serk is the Great Russel Channel, and along the course we passed a buoy which marks a reef close to. Although the buoy is cone-shaped, with the apex down to present a minimum resistance to

Adastra, Merlin, and the fishing boats lying in the eddy at Les Laches. This, the best harbor on the island of Serk, is open from Northeast around to South southwest, except where a pile of rocks outlies it



### LASSIE-All Boat

A Well Built and Cleverly Designed Auxiliary Knockabout — Fast Under Sail and Reliable Under Power



The interior arrangement is simple and comfortable. The finish is white with mahogany trim

When driven by both the sail and engine, Lassie moves along at a surprising rate

A N attractive auxiliary of pleasing appearance was recently completed for David Bannerman of Elizabeth, N. J. from a new design by William Atkin. The builder, Richard B. Chute, at his place at Huntington, L. I. has turned out a very creditable job which has met with universal approval. The hull has been exceptionally well built, and, a point worth mentioning, follows the design in every detail. The construction of the hull has been very carefully done and while it is not intended to be a fancy job in any way it is a joy to look at the work of a boat builder who understands his work. Lassic is a real shippy job from keel to truck.

Lassic is a substantial auxiliary 20½ feet long, built from Atkin designs for David Bannerman of Eliza-

beth, N. J.

such as the keel, stem and stern as well as the frames are of white oak while the planking is of 1½ inch white cedar. Ballast for trimming the hull is all carried outside and consists of 2600 pounds of cast iron of suitable shape. Decks are ½ inch fir covered with 10 oz. duck laid in Jeffries marine glue. All outside trim is Honduras mahogany and white oak.

The cabin is arranged to sleep four persons and contains a lavatory with all necessary plumbing as well as the galley and an abundance of storage space. The finish is white with a few shippy looking mahogany shelves and pin rails. The auxiliary motive power is a two cylinder two cycle Lathrop gasoline engine of 8 h.p. which pushes her along at a little over six miles per hour. Head room is 5 feet 4 inches, quite enough to get about in with ease. Sail area is 530 square feet under which Lassic moves fast in a good breeze and handles exceptionally well.

### Outboard Motoring

through the

### PANAMA CANAL

The Smallest Boat Ever to Officially Transit the Canal Under Its Own Power with the Same Privilege as the Largest Steamship

by John Edwin Hoag





Leaving Pedro Miguel Locks after going through with the steamer Favorile, which is now ahead

The little Put-Put in Culebra Cut. It looks more like some natural river canyon than a ditch dug by human beings

ministration to secure a permit to operate—as I said, "a permit to operate a small motor boat through the canal," "What is the tonnage of your craft?" asked the clerk, as he withdrew a pad of blanks, and prepared to issue the necessary permit. "Tonnage!" I replied. "Why, you could hardly call it tonnage. My boat is only a 15-footer, and the whole outfit probably would not weigh more than 300 pounds."

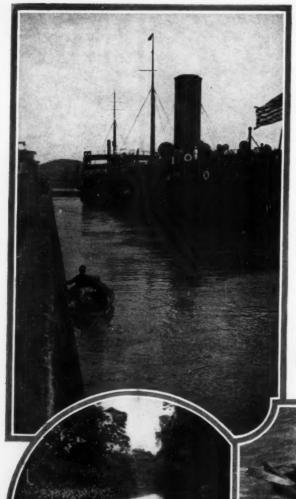
The toll on shipping passing through the Panama Canal is assessed at a flat rate of \$1.25 per gross ton. Naturally, the clerk was in a quandary. It was the first time that the issuance of a permit had been sought for a craft of only a fraction of a ton. He called another clerk. They held a consultation. They wore out several pencil points. Finally they gave up the problem, and turned it over to the Assistant Captain of the Port.

After hearing my story, Captain Swenson asked: "Have you your naval card with you?" "Yes," I replied, producing the card. The canal official looked at the card, my photograph thereon dispelling any doubt he may have had as to it's genuineness. "Very well", he said. "I reckon we'll have to fix you up somehow. 1 guess you're not as





A view of Culebra Cut from above. Here the engineers cut down the continental divide for a perpendicular distance of 827 feet. The boat in the central foreground of the picture is a 60 foot tug



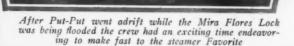
Going down the locks is much less thrilling than going up. This scene is the upper chamber of Gatun locks crazy as I first thought you to be. Let's step into my office."

In Captain Swenson's office, we wore out a couple more pencil points, and filled several sheets of scrap paper with figures. Finally

scrap paper with figures. Finally the desired permit was issued, and I paid out 75 cents as the amount of voll to be charged for taking my boat through the great ship lane from the Pacific to the Atlantic. A similar sum was paid for the return voyage. When the papers were handed to me Captain Swenson said: "I can assure you that yours is the smallest boat that has yet attempted transiting the Panama Canal under its own power. This is the lowest priced permit we've issued since the canal was opened. I hope you have a pleasant trip—and good luck to you!"

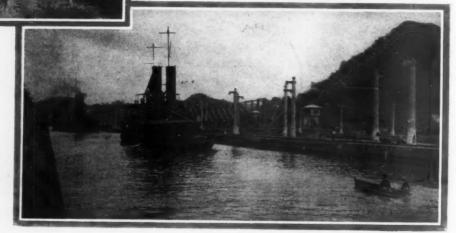
In order to comply with canal regulations my boat had to be given a name, carry an American flag, and be reported through the canal the same as any 25,000 ton ocean liner. Likewise my 75 cent permit entitled me to individual lockage—should I require it, even though the Government might lose several hundred dollars operating the locks for a craft traveling on a seventy-five cent ticket. Realizing this, I agreed to transit the locks with ships that were being locked through.

At sunrise next morning, the cruise of the Put-Put from the Pacific Ocean to the Atlantic, began. As skipper of the craft, I had two able assistants—Henry Grieser, swimming instructor of the Balboa Athletic Club, and Robert Alderman, son of a naval officer, and himself an Annapolis cadet. Our start was made from the Balboa Yacht Club, at which point the waves that came rolling in from China were broken by several small-islands a mile or more offshore. In order to get into the canal we cruised behind these islands for several miles, and then headed right out into the open sea. Of course, we were out beyond the breakers, (Continued on page 270)



Typical scenery behind some of the smaller islands and away from the shiplanes in Gatun Lake

Pedro Miguel Locks at full flood. The upper gates have opened and Put-Put is following the large craft into the Gatun Lake level of the Panama Canal



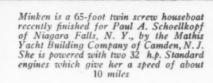


# MINKEN, a Twin Screw Cruiser

An Economical Type Vessel Adapted for Inland and Coastwise Cruising

Photographs by J. N. Pearce



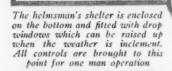


A corner of the owner's stateroom, showing the passageway forward to the dining room. This boat is arranged with the owner's quarters aft, and the engine room and crew's quarters forward

As can be seen, the galley is forward and is of ample size. In addition this boat has three double staterooms and a dinina saloon, as well as bathrooms, toilets, and a separate stateroom for the captain

# CYRENE a Comfortable Houseboat

An Excellent Example of What the Modern Houseboat Should Be



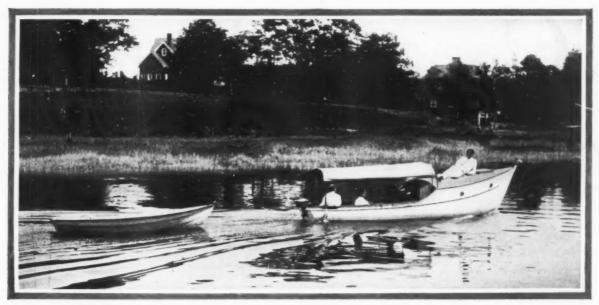


Cyrene follows the general structural appearance of many other houseboats of the same type which have gone before her from the yards of the Mathis Boat Building Company. She is 60 feet 8 inches long with a beam of 16 feet. She is fitted with a single six-cylinder Standard gasoline engine of 6½ inches bore and 8 inches stroke

The deck house is one of the most comfortable places on the boat and is fitted up as a cozy living room. The furniture is all massive and intended for use as well as good appearance

Immediately astern of the deck house is a large expanse of open deck space which is furnished with wicker furniture of the most comfortable type. This space is also used to house the small boats when under way, when they are swung inboard on the davits





The speed of Outboarder seems unaffected by a heavy load: There were seven persons aboard, two of them in the cabin and in addition a heavy dinghy was being towed

### OUTBOARDER

An Epoch Making Craft in the Small Cruiser Field By John C. Hilton

A TWENTY-TWO foot cabin cruiser with comfortable accommodations for two people — powered by a Johnson Outboard Motor — speed: at least six miles an hour.

That's what they set out to build.

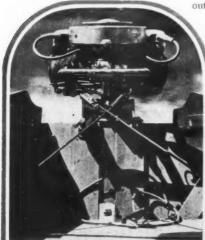
"You're crazy,"
everybody told
the m. and,
"She'll be too
light to
stand up;"
"You won't
have power
enough to
head into a

stiff breeze;" "You can't make her seaworthy;" "With that little motor she'll make about nothing an hour—if the tide is with you."

But there she is—trim as you please—and her speed is nearer eight than six miles an hour. She has cruised all over Long Island Sound this summer. She has gone out whenever the spirit moved her owner, without respect to weather conditions. She has been in one of the toughest blows that has hit these waters in several years—the tail end of the late August typhoon.

And she hasn't shown the white feather yet.

She rides heavy seas like a cork. She noses into the wind without apparent effort. She handles like a polo pony. And despite her relatively light construction her bracing members are such that she has stood some rather brutal buffetting without a sign of weakness. (Continued on page 270)

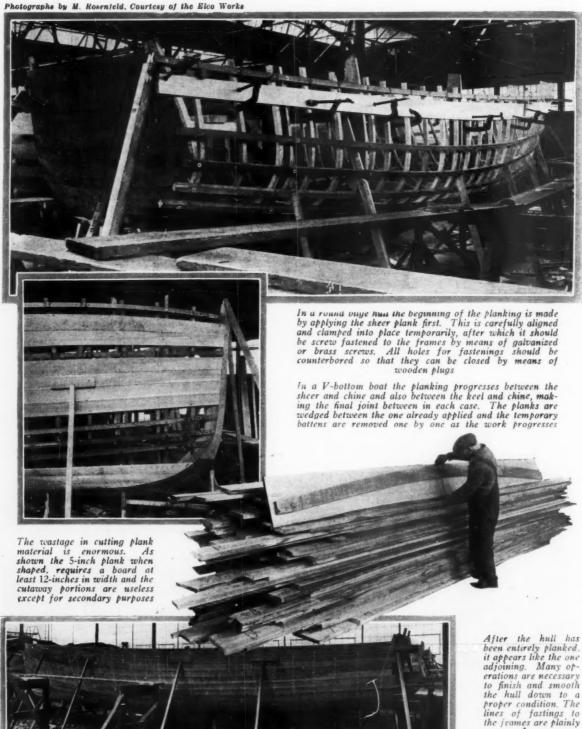


The little Johnson motor is hung over the stern exactly as on a row boat, and is connected with bronze cables to the steering wheel mounted on the cabin bulkhead

When traveling light Outboarder moves fast and throws a distinct wave



# Correctly Planking



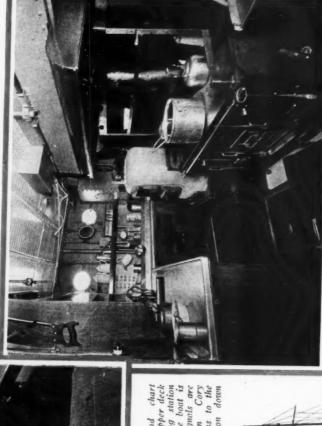
shown

Boat Pictorial Descriptions of Boat Building Operations Which Illustrate the Proper Methods of Applying the Planking to the Frame of the Hull



# TAORMINA The Complete Yacht

New Craft Powered with Winton Gasoline Engines, the Last Word in Yacht Construction



The pilot and chart house on the upper deck is the operating station from which like boat is consmitted on Cory ship's telegraphs to the cugincer's station down



Taormina was built for Wm. S. Eaton by the George Lawley & Son Corporation. She is 120-feet long and most modern in every respect. Her galley houses the cooking facilities and heating plant

The power plant for Tuormina consists of two main engines 9% by 14 inch bore and stroke made by the Winton Engine Company, turning Hyde wheels

### Ococe, a Smart Houseboat Cruiser



A Fast Boat of Large Size Well Adapted to Comfortable Touring and Sightseeing Over the Many Attractive Waterways of the Country

An unusually comfortable and spacious deck saloon on the 70-foot houseboat Ocoee, built for W. S. Milne of Chattanooga, Tenn., by the Mathis Yacht Building Company

There are sleeping accommodations for fourteen persons in addition to the crew. The power plant consists of two Sterling six-cylinder Trident engines

The after deck is furnished with table and wicker chairs where one may enjoy the fresh breezes from the water. The deck house is entirely of mahogany



# Speed-

High Speed, High Power Engines Have Forced Boat Speeds Along to Points Considered Impossible a Few Years Ago

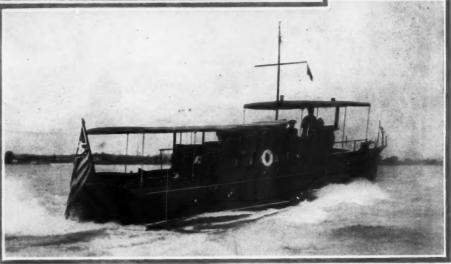
Jean A, formerly Jack Farr's Namid, now owned by Dr. W. E. Adams of Detroit. A 40-foot V-bottom cruiser designed by John Hacker and now powered with a six cylinder, 200 h.p. Hall-Scott marine engine, which drives her at 20 m.p.h.



Vincenta V, a 30-foot Spanish built runabout, designed by Hacker, and built by Conde & Cia in Spain. Powered with a 200 h.p. six cylinder Hall-Scott engine, she does 42 miles very easily

Estelle, a fast Jersey Coast cruiser, designed for A. L. Thorn by Thos. D. Bowes. She is 36 feet long and does 21 miles with a four cylinder, 125 h.p. Hall-Scott marine engine

Betty M, a fast and seaworthy express cruiser, owned by Stewart Pittman of Detroit. She has recently been repowered with a pair of 200 h.p. six cylinder Hall-Scott engines, which drive her better than 25 m.p.h. continuously



# Spray and Action



One of the standard 25 by 6-foot single surface propeller Sea Sled runabouts, which is able to maintain 38 m.p.h. in rough water. The power plant is a six cylinder Hall-Scott, 200 h.p. engine

Baby S-X, a 26-foot mahogany one design Hacker runabout, owned by J. H. MacDowell of Cleveland. She has been equipped with a 200 h.p. Hall-Scott engine, and does better than 40



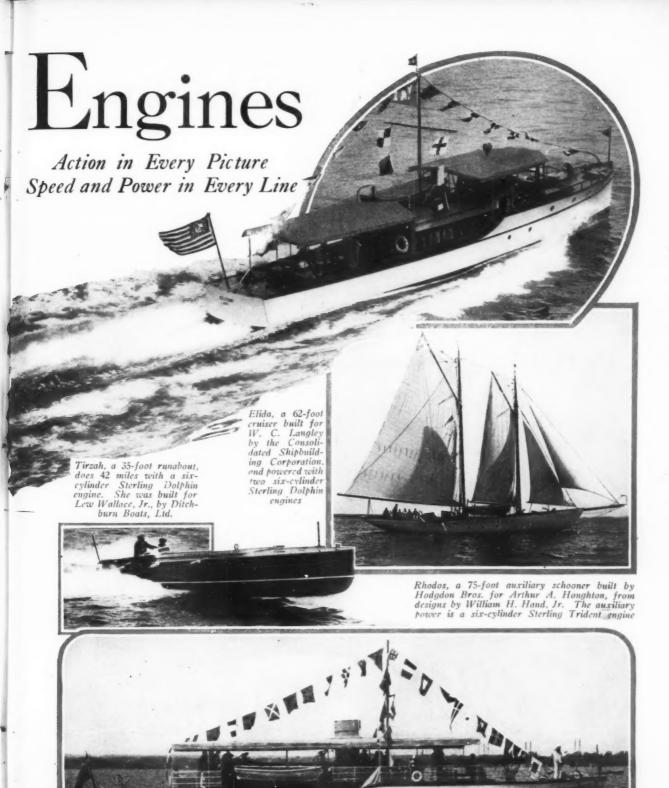
Point Loma, a fast sight seeing boat on San Diego Bay, Calif., owned by The Star and Crescent Co. She is 50 feet long, and is powered with 200 h.p. Hall-Scott engine, which drives her 23.4 miles per hour. She is one of the most popular boats on San Diego Bay

Kilkare, a fast 45foot bridge deck
cruiser built by Greenport Basin & Construction Company
for Henry H. Halterman. She is now
fitted with a 200 h.p.
Hall-Scott engine,
which drives ten miles
better than her old
four-cylinder engine
was able to do



# Fine Boats with Fine





Wanderer, a 76-foot cruiser, owned by Gordon K. Fraser, Lakefield, Ontario, and powered with two six-cylinder Sterling Trident engines



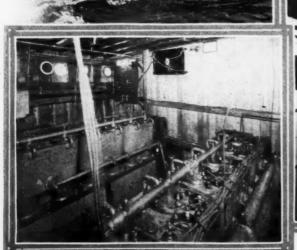
# Fleetwood III

A New Addition to the Yacht Fleet at Miami, Built for Commodore J. Perry Stoltz, Owner of the New Fleetwood Hotel

> Flectwood III was built by the New York Yacht, Launch and Engine Company under the personal supervision of her owner, Commodore J. P. Stoltz. Many of the novel features found in the boat are his suggestions. She is 75-feet in length and exceptionally roomy

Photographs by M. Rosenfeld

At the foot of the companionway leading down from the deck house is a spacious saloon which is provided with extension berths to take care of the overflow of guests who cannot be accommodated in the stateroom further aft



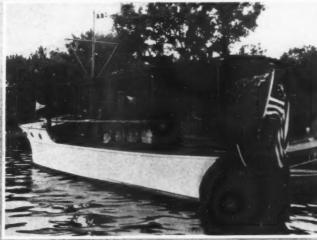
In the engine room are a pair of six-cylinder Twentieth Century marine engines 6½ by 8½-inch bore and stroke. These develop their power at about 450 revolutions



One of the features of which the owner is very proud is the broad expanse of deck space just astern of the deck house and duning saloon. This space, when the small boats are swing outboard is large enough to accommodate a dancing party with numerous guests

## NEMIK A High Speed Cruiser

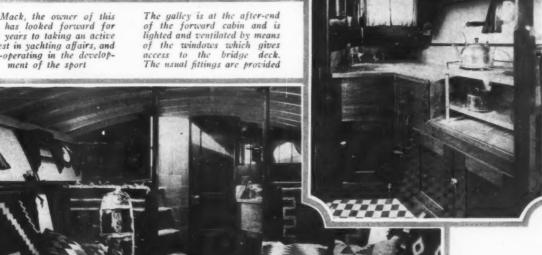
Newest Craft Uses a Powerful Engine and Attains a 30 Mile Speed with Ease



Mr. Mack, the owner of this boat, has looked forward for some years to taking an active interest in yachting affairs, and is co-operating in the develop-ment of the sport



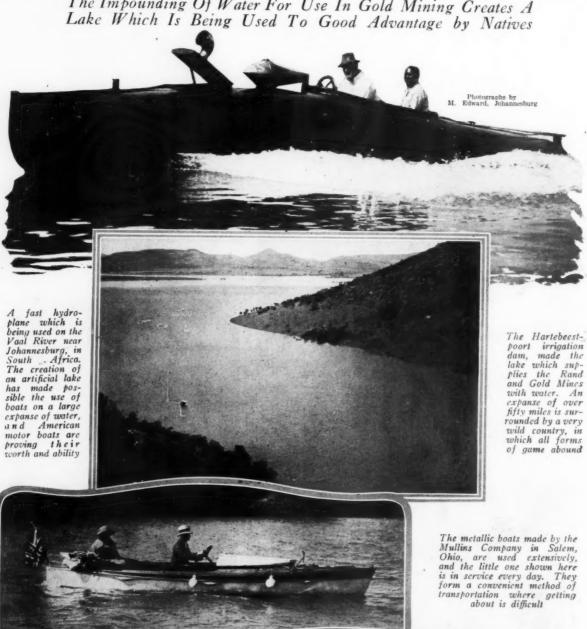
An unusual picture showing the hand-some flare of the forward sections of Nemik, the 45-foot cruiser recently com-pleted by the Albany Boat Corporation for L. R. Mack of Albany, N. Y.



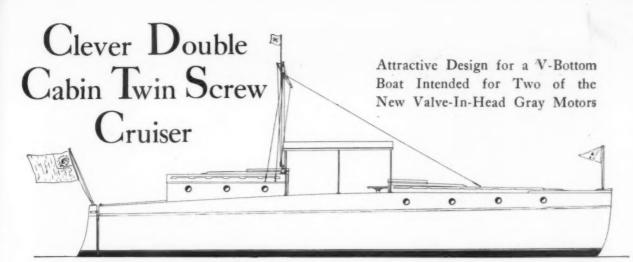
The forward cab-The forward cabin, looking aft toward the galley
and the engine
room door. The
built-in berths are
well upholstered
and as comfortable as the beds at
home. A cabin for home. A cabin for the owner is aft

### A New Sport in South Africa

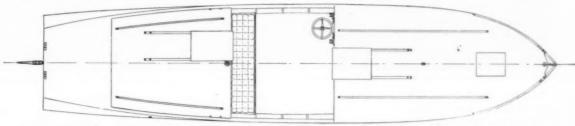
The Impounding Of Water For Use In Gold Mining Creates A



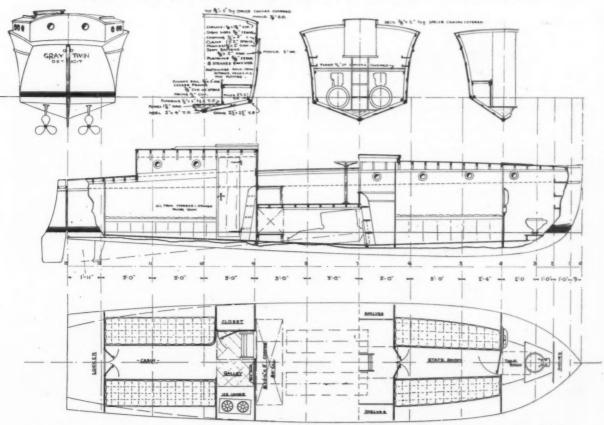
Another Mullins boat on the Vaal River. This happens to be one of the little hydro-planes, which are quite speedy



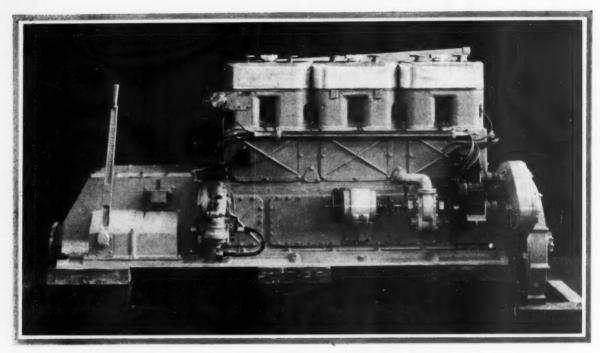
The deck plan shows the available space on the bridge deck as well as on the flush deck aft. The crown on the forward deck is not excessive so that it will be easy to maintain a foothold here even though the boat may be in motion



Outboard profile of a clever 30-foot twin screw cruiser. This boat is laid out with a hogged sheer line which adds to its appearance. The cabin top aft is kept high to provide sufficient headroom in the after compartment



The stern view and construction section above show the structural materials entering into the hull and give an idea of the lines. The inboard construction profile shows the interior construction, with dimensions, the engine location and other features. A pair of the new Gray valve-in-head engines are installed under the bridge deck amidships and should drive the boat at a rapid rate



The new Winton gasoline engine of 250 h.p. which is made for both right and left hand rotation

### A BIGGER Gasoline Unit

HE newest heavy duty gasoline engine is the Winton model 106 just produced by the Winton Engine Works of Cleveland. This engine is an unusual one with six cylinders, four cycle, with a 7-inch bore and 8-inch stroke and fills a long felt want for a powerful marine en-

gine that will stand up and give satisfactory service under any and all conditions. The announcement of this addition to the long list of successful Winton marine engines will come as welcome news to boat owners, designers, and architects, who know the need for a marine engine of medium size that can be depended upon completely. The Model 106 is clean, quiet, sturdy, unusually simple in construction, and shows throughout its design many desirable refinements and improvements which evidence the continued effort of its makers to stay in the forefront as the builders of the world's finest marine engines. The Model 106 is exceptionally powerful for its size, developing 250 h.p. at 1,200 r.p.m., and is heavy enough to insure dependability. Supplied in both port and starboard types, to facilitate operation in twin-screw installations. One of the outstanding features is the oversized crankshaft, four inches in diameter, which eliminates torsional vibration and provides large bearing surfaces for connecting rods and main bearings, reducing bearing pressures and increasing life of engine. Crankshaft is made of high-carbon steel, and entire shaft is machined and drilled from main bearings through cheeks and pins for lubrication. All bearings and pins are ground. Bearings are brass shells, lined with best highgrade babbitt scraped to fit.

New Type Heavy Duty Marine Engine Which Approaches the Rugged Construction and Long Life of the Sea Going Diesel Engine

y Duty Marine
Approaches the ction and Long
Going Diesel ine

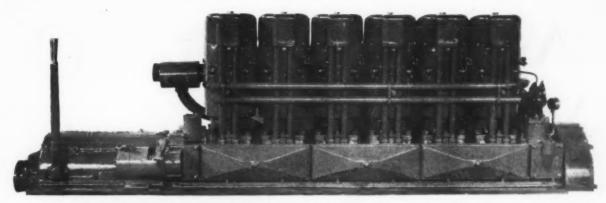
Water Box. Made of close-grained charcoal iron. A one-piece casting, flanged and bolted to top crank-case. Into this casting are inserted six close-grained charcoal iron liners. Water box provided with cleaning holes. Valve side equipped with removable plates, permitting ready inserted in particular control of the con

Cylinder Heads. Readily detachable, without removing intake or exhaust manifolds. Made of same material as cylinders; cast in pairs; thoroughly water jacketed; secured to cylinders by high carbon studs. Fitted with aluminum covers, which are oil tight and readily removable. Covers completely enclose the valve mechanism, and are held in place by cast iron hand-wheels.

Cylinder Liners. Cylinders fitted with close-grained charcoal iron liners, machined and ground to mirror smoothness. Liners insure simplicity in removing cylinder walls, thereby reducing upkeep. Machined on both sides, providing uniform thickness, resulting in maximum and even cooling of liners and pistons. Liners sealed at top by cylinder head and gasket; tightly packed at bottom by rubber ring.

Pistons. Made of same formula as cylinder liners. Ground the full length; fitted with four rings above wrist pin, and one scraper ring below. Bronze wrist pin bearings are carried in the piston and are lubricated by splash feed. Wrist pins are made of chrome nickel steel, hollow bored, hardened and ground, and clamped securely in connecting rod.

(Continued on page 270)



Starboard side of the dual valve 6-cylinder heavy duty Frisbie engine of 115 h. p.

# Frisbie's HIGH POWER Engines

Dual Valve Additions to the Line of Overhead Valve Engines Designed to Develop Up to 185 Horse Power

PRODUCTION in earnest has begun on two new types of Frisbie engines, at the Middletown plant of the Frisbie Motor Company, some of which have been made in an experimental way before. The new machines are of the dual valve overhead type, and are known technically as the TM6 and TS6. These engines are intended for what is generally called medium duty, which can be considered the ordinary service expected of an engine which is designed to operate only 365 days out of the year. The TS6 is the higher speed of the two and while the illustrations shown are of the TM6, the other one is in the main identical, being lighter in some of the castings and parts to permit of a rotational speed up to 1,500 revolutions per minute, at which it will develop 185 h.p. On the other hand the TM6 is somewhat heavier, and is intended to deliver only about 115 h.p. at speeds up to 900 revolutions.

Both engines are of the dual valve-in-head type. Heads are removable without disturbing intake, exhaust or water manifolds or wiring. Cylinders are cast individually to insure uniformity and reduce maintenance costs. They are of a special grade of grey iron and finish ground to size.

Cylinder heads are cast individually, machined on the under side and have water cooling passages of extra size around all valve seats.

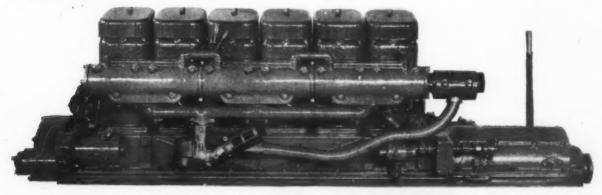
The engine bed is webbed for maximum strength and is a single length casting which includes reverse gear and thrust bearing.

The seats for the main bearings are machined and fitted with removable bronze backed babbitted shells. The crank shaft in both models is chrome nickel steel, 2½ inches in diameter with seven bearings of ample size. It is finished all over and drilled for pressure feed lubrication. The forward end of the crank shaft has an integral flange to which the flywheel is held by fitted bolts.

The reverse gear is a special Paragon fitted with couplings at both the forward and after ends, thereby permitting the gear to be removed bodily with a minimum of trouble.

In designing these motors, the Frisbie Company has kept in mind two vital actors—accessibility and reliability and these points are well brought out not only in the quality and class of material entering into the construction of the engines, but the assembly as well. For instance, in either model the entire integral cam shaft can be removed without disturbing anything other than the cam shaft bearing holding nuts.

Both models are fully enclosed. There are no visible moving parts other than the water pump drive shaft and its coupling.



The port side of the TM6 Frisbic engine, in appearance the TS6 is similar.

### Auxiliary Machinery

For the

### BIG YACHT

HE Motorboat Exposition at Grand Central Palace during the early part of January, is a dignified and interesting exploitation of the year's accomplishments in the building of yachts, motorboats, small sail hoats and their accessories. It is attractive to all who love the water, whether able or not to satisfy their desire of possession. Each year sees many new novelties designed by those who are farlasses, -patented anchors, not to mention their patented duplex swiveled ram electro-hydraulic steerer for houseboats and yachts of the larger size, are all to be seen.

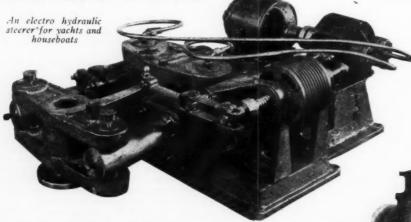
As an advancement in the scientific field of small craft equipment, this display is remarkable, showing as it does, what applied thought and experience can do to meet the

needs of the present-day owner.

The electric anchor wind-lass suitable for operation by current from the starting batteries

That their product is not in the experimental stage but is giving satisfaction in service on small craft as well as the largest motorships, is proven by the fact that A. E. Co. auxiliaries are installed on such yachts as the Miramar, Mamie O, Ohio, Dolphin, Dauntless, Ohio, Goodwill, Zalopma, Nenemoosha, Centaur, Isaetc. The three new Diesel electric Van Dyke tugs have their

equipment. Also the Diesel tug Arthur



sighted enough to anticipate the desire of the average owner for moderate priced equipment that is a help to economy and comfort.

In this respect, there are many novel devices shown this year, chiefly those that improve upon equipment well •known to the boat owner.

But for many years there has been a dearth of display of the complement of what is commonly known on the The American Engineerlarger craft as deck auxiliaries. ing Company have a display this year on the balcony, in which are shown some units that are practical evidence

of thoughtful and far-sighted pioneering in this branch of marine equipof ment.

Motorboat elecwindlasses, tric that run off the starting batteriesstep on the button, up comes the anchor, — boat hoists, warping gypseys, - electric pump brake windThe first of new type electro hydraulic yacht built windlass Ameri-Engineering Company

> Herron and nine Diesel Socony barges for the Standard Oil Company of New York.

Wherever the work to be handled is heavier than can be taken care of readily by the crew, there is need for electric deck machinery. Equipment of this kind will absorb all of the hard labor in pulling on lines and make boating a still greater pleasure.

## On to FLORIDA-Then Manhasset Bay

Racing Plans Taking Definite Shape for Events at Palm Beach and Miami This Winter-New York Gold Cup Regatta to be Held at Manhasset Bay August 28-30, 1925

ACING plans are well formulated for a number of the important regattas to come-those at Palm Beach February 21 and 22, at Miami, Florida, March 19-22, at Buffalo in August and finally the Big New York Gold Cup Regatta to be held at Manhasset Bay on Long Island Sound, August 27-30, 1925. Detroit, Michigan, will wind up the 1925 racing season with their usual Labor Day regatta, minus the Gold Cup event, but featur-

Labor Day regatta, minus the Gold Cup event, but featuring a 150-mile Sweepstakes with a large cash prize.

At Palm Beach, on Washington's Birthday, it is planned to hold the second competition for the Bradley Gold Challenge Trophy, now held by Colonel E. H. R. Green, he having won it with his Baby Gar Mary in last winter's race. This race is open to displacement craft of any length and power, without any restriction whatsoever as to hull or engine providing they are not step hydroplanes. This very valuable trophy goes to the winner for one year and becomes the permanent property of the owner who first wins it three times. No doubt Gar Wood, Howard Lyon, Webb Jay and others will be seen in action.

At Palm Beach also, there will be a class for 151 cubic inch hy-droplanes racing for the Royal Poinciana Trophy, as well as classes for cruisers, runabouts and sea skiffs.

The regatta at Miami and Miami Beach this winter promises to surpass anything which has ever happened anywhere in the past. The days are March 19-21—somewhat later in the season than heretofore, but at a

season of the year when the weather is much better in the South for aquatic events and after the polo, golf and other similar tournaments have been completed. Lack of hotel accommodations has, in the past, prevented many northern yachtsmen from attending mid-winter regattas but this condition will also be improved by the late racing dates this

At Miami will be seen the first real one-design motor boat racing which has ever been attempted anywhere. Carl G. Fisher of Miami Beach has ordered ten race boats of his own, all alike, and these will be raced at the Miami Beach Regatta. These boats are 18-footers and have been designed and built by the Purdy Boat Company of Trenton, Michigan, and are powered with 100 horsepower Scripps motors. They show a speed of better than 40 miles an hour. The drivers of the boats will be the following famous automobile race drivers: Tommy Milton, Earl Cooper, Bennett Hill, Harry Hartz, Peter De Palo (nephew of Ralph De Palma), Fred Comer, Ralph De Palma, Barney Oldfield, and others.

Something over \$10,000 in cash has been offered by Mr. Fisher for the prizes for the races for his craft. The series prize money awarded on the point system will be divided as follows:

Winner, \$1,000; Second, \$850; Third, \$800; Fourth, \$750; Fifth, \$700; Sixth, \$650; Seventh, \$600; Eighth, \$575; Ninth, \$550; Tenth, \$525.

In addition, there will be a first prize of \$300 and a second prize of \$200 in each of the six twelve-mile heats. Six twelve-mile heats will be scheduled for the Fisher

boats, three on March 20 and three on March 21. addition to prizes for the winners of each heat, the series prizes for all six heats will be figured on the point system as follows:

First boat, each heat, 400 points; Second boat, each heat, 361 points; Third boat, each heat, 324 points; Fourth boat, each heat, 289 points; Fifth boat, each heat, 256 points; Sixth boat, each heat, 225 points; Seventh boat, each heat, 196 points; Eighth boat, each heat, 189 points; Ninth boat, each heat, 144 points; Tenth boat, each heat, 121 points.

In addition to the races at Miami for the one-design Fisher boats, there will be races for two very valuable American Power Boat Association Trophies. The first race for the new Horace E. Dodge Memorial Trophy will be held, also a series of races for the Fisher-Allison Trophy.

The Dodge Trophy race is open to displacement craft irrespective of length or power providing the piston displacement does not exceed the cube of the

boat's water-line length divided by twenty-five. This race will consist of heats of about twelve miles in length. boat which first wins four heats will be the winner and hold the trophy until the second race is held for it at New York in August.

Gold Cup boats with 625 cubic inches; Fisher-Allison boats with 1,075 cubic inches as well as boats with the Sweepstakes piston displacement of 1,350 cubic inches and 32 feet on the water line will be eligible to compete for the new Dodge Trophy at the Miami Beach Regatta this winter. If a boat is powered with a full-sized Liberty of 1,650 cubic inches, she must be at least 34 feet in water line length in order to compete for the Dodge Trophy. No gear boxes will be permitted in this race.

The method of starting the boats in the race for the Dodge Trophy is also a new feature. Instead of starting the boats altogether with a one-gun start or pacing them around four abreast for one lap as is done in the Sweep-stakes class, the boats will be (Continued on page 138)

#### Dates for Important Events to Come

January 2-10 — Motor Boat Show, Grand Central Palace, New York, N. Y.

February 23-24 — Palm Beach (Fla.) Regatta. 151 cu. in. hydroplanes and others. March 20-22 - Annual Southern Regatta,

Miami Beach, Fla. Races for Horace E. Dodge Trophy, Fisher-Allison Trophy and \$10,000 Carl G. Fisher cash prizes. August 13-16 - Annual Niagara Regatta, Buffalo, N. Y.

August 25 — Ocean Race for James Craig Trophy — Philadelphia to New York.

August 25-26 - Handicap Express Cruiser Champion, Middletown, Conn., Sachems Head to Manhasset Bay. AUGUST 27-30 - GOLD CUP REGATTA,

NEW YORK, N. Y.

Races for Cruisers, Express Cruisers, Run-abouts, Hydroplanes, Outboard Motors, Aquaplanes, Coast Guard Boats, etc. etc. September 4-8 - Annual Regatta, Detroit,

# Where Is Leiv Eriksson?

All Yachtsmen are Asking The Question---Unexplained Absence of Reports of William Washburn Nutting and His Venturesome Crew Causing Much Concern

HAT has become of Leiv Eriksson? Since early October the yachting world has asked itself this question, although it seems now that the answer cannot come through until the melting ice liberates the Arctic in the spring. In the meantime, no news is good news, and it is the belief of those best qualified to know that Nutting, Hildebrand, Todahl, and Fleischer are alive and safe somewhere along the western coast of

Greenland.

It was in the spring of last year that William Washburn Nutting, formerly editor of Motor Boat and long before that the controller of MoToR BoatinG's destinies, first announced his latest trans-Atlantic venture. He would go to Bergen, Norway, he said, pick up a sturdy sloop, and thence follow the Viking trail to America. Arthur S. Hildebrand, who has done most of his cruising in the blue water of the Mediterranean, volunteered to ac-company him for the sake of contrast and novelty; and John M. Todahl, the marine artist whose cover illustrations have often appeared on MoToR BoatinG, who has cruised single-handed from New York around again to New York via Lake Champlain, the St. Lawrence, and the open sea, agreed to make the third of the American party. Arrived in Norway, the three picked up Fleischer, a state official of Arctic experience, who was given leave of absence by his government to make the voyage.

In speculating on the present whereabouts of these four Arctic voyagers, it



Arthur S. Hildebrand and William Washburn Nutting as they stood on the deck of the S. S. Stavangerfjord just before sailing for Norway last spring

must therefore be realized that they are all hardy, able, Moreover, resourceful men. Nutting is one of the luckiest daredevils that ever braved the uncertainties of an oceanic voyage. Mishaps that would have proved the end of another man have been carelessly turned to the account of this accomplished seaman, who is always planning fresh adventures while his friends are still congratulating him on his escape

from the last.

On July 4th, Leiv Eriksson, a staunchly built 42-foot auxiliary-powered sloop, named in honor of the Viking discoverer of America, left Bergen, bound for Reykjavik, Iceland. At about the same time the yacht Shanghai, owned by Judge Wells, who subsequently experienced shipwreck on the Nova Scotia coast, departed from Bergen with the same objective, but arrived several days sooner. On July 26th Nut-ting, having touched at the Faroes along the way, put in his appearance at Reykjavik, and when Judge Wells sailed for Greenland a few days later, the skipper of Leiv Eriksson announced his intention of departing within the week. However, the U. S. Army world flyers were at the capital of Iceland at the time, and for one excellent reason or another the modern Vikings delayed their start until August 10th.

The precise date of their arrival at Julians-Haab, Greenland, is not known; but even before they were reported there, the false news of their safe landing at Battle Harbor, Labrador, was broadcast (Cont. on p. 132)

## SLOPOKE, A Scow Houseboat

An Unusual Craft, of a Type Practical for Year Around Use as a Home and Yacht Combined in One Unit—Supplied with Power to Give It Enough Mobility to Make It Independent of Tows

Designed Especially for MoToR BoatinG

#### By William Atkin

ANY readers have asked for the publication of plans for a house boat; not the type which is associated with a cruise in Southern Waters; but just a big, plain, square ended craft with a lot of deck space and plenty of room below for the living quarters. The wishes of these readers have been gratified in the design of Slopoke. The name will fit well, for if she isn't anything else she will be slow. One cannot expect speed and comfort to be gathered together in one boat; but on the other hand she will move along in still water and this will add much charm to living

afloat for the summer. A motor of approximately 15 h.p. and turning at 450 to 500 r.p.m. is the best type machine to use in a craft of this description, for it will handle a large diameter propeller and the latter will be necessary. The form of the stern is not conducive to speed and one cannot expect over 4½ miles an hour. There would be very little gained by turning the propeller in a tunnel and so it seemed best to keep the hull in the simplest form possible.

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Slopoke is 44 feet in length, 14 feet in breadth and draws 2 feet 2 inches. She is a square ended and parellel sided scow not difficult to build and should be quite within the capability of a first class house carpenter. Her straight sides and bottom preclude the necessity of a steam box, and so long as the planks are fitted with seams

steam box, and so long as the planks are fitted with seams which are slightly open outside and tight inside, so as to hold the caulking, little difficulty will be found in her building. This kind of boat is not dressed up in a fine finish, the planks being nailed on as they come without hand planing or sanding. It will be noticed that the forward sections are slightly different than those aft. This difference is in the height of the freeboard only, and is needed to give the craft the appearance of having her bow up; if both ends are made alike she will look down by the head when launched.

The most satisfactory way to proceed with the construction is to first make the ten frames as shown and set these so that the boat will be bottom side up. It will be a simple matter to line these with a chalk line. The notches for clamps, chine logs, keelsons, etc., can be cut as the frames are being made. The side frames will be made of 3 by 5 inch yellow pine and set 4 feet center to center; if yellow pine is not available spruce or fir can be substituted. The pine however will be best. The bottom frames will be made of 3 by 6 inch yellow pine and will be spiked to the side frames with heavy boat nails. Along the flat of the bottom, the bottom frames are set forward of the side

frames, but forward this arrangement is reversed. In making the frames remember that the dimensions given on the drawing of the lines are to the outside of the planking and consequently 2 inches must be taken off all around as this is the plank thickness.

The side planking will be applied first and this, as mentioned above, is 2 inches thick, of yellow pine. Beginning at the bottom the strakes run parallel in widths about 9 inches wide, the width is not an important matter and an inch or two more or less will not matter. It will

be noticed that the two top planks follow the sheer and are 3 inches thick; this means that stealers will be required between the wales and the thinner planks on the sides. As the planks are applied edge fastenings in the form of ½ inch galvanized iron rods should be driven between each frame.

The chine logs will be made of 2 by 6 inch yellow pine and spiked to the frames with galvanized iron boat nails. All these parts should be thoroughly painted as they are put together; while this may take a little additional time and a few gallons of paint it is well worth doing. The joints will stay together better and the life of the boat increased. It is rather a shame that so many boats are built without a vestige of paint layed in the joints.

The bow and stern will be made of 3 by 9-inch yellow pine; these should be carefully cut to length and securely fastened to the ends of the side planking, and to the chine logs as well. As most of the bumping the boat will get will be taken by the ends these will be reinforced by the 3 by 4-inch doubling as shown.

The bottom has three keelsons as indicated, these being made of 3 by 12-inch yellow pine; one in the center, the others dividing the half breadth equally. After having dressed off the bottom of the chine logs and the edge of the side planking, the craft will be ready for laying the bottom.

This will be 2-inch yellow pine in 9-inch widths and of course laid athwartships. By all means set the ends of the planks at the chine in Jeffery's liquid marine glue, this will save caulking and make the joint tight regardless of small, or large for that matter, irregularities in the faying surfaces. Three 6-inch galvanized iron boat nails should be driven in each end of the plank at the chine and two into the keelsons. The joint where the bow and stern planking joins the bottom should butt together so as to be caulked.

For the boat design to be published in February MoToR BoatinG, Mr. Atkin has selected a fast day cruiser of about 30 feet in length with a beam of only 7 feet. This boat is not intended to be for the cruiser who will live on his boat for weeks at a time, but rather for the man who enjoys a little speed, and the exhilaration of getting somewhere in a hurry. It will be powered with a big six cylinder engine, and is to be fast enough to satisfy the most critical. At the same time it will be seaworthy enough to make it reliable and will permit of covering greater distances over the week-end cruise, than would be possible with the normal type of slower speed craft.

The skeg will be made of 6-inch yellow pine and fastened with 1/2-inch galvanized iron drift bolts. Its after edge should be tapered off so as to permit the water to flow as freely as possible to the propeller. A copper or lead sleeve must be fitted in the shaft alley for otherwise this part will give trouble by leaking; inside this should be flanged over and screwed to the inside of the keelson while at the outer end it will fit snug under the flange on the stuffing box. After caulking, paying and puttying the seams the entire bottom and sides should be painted; the underwater portion being coated with several coats of

some good anti fouling composition.

Now the hull will be launched, bottom side up to be sure; but after it is afloat it can be turned over, drawn up on the shore to be finished. The deck will be laid after having fitted additional deck beams as shown. These will be yellow pine or spruce 2 by 4-inches with a crown of 21/2-inches in 14 feet, the width of the deck. The decking will be 2-inch white pine or fir with seams caulked and payed with marine glue. Hatches must be caulked and payed with marine glue. left for access to the motor and to the storage space under the forward and after decks. The motor hatch should have an opening about 4 feet long by 6 feet wide. Have two hatch covers arranged to hinge at the sides. The hatch covers need not be as heavy as the deck. If the framing is made of 3/8 by 21/2-inch spruce and the covering of 1/4-inch cedar or pine they will be at the same time strong enough to walk on, and light enough to be lifted The two other deck hatches will be of the same general construction.

The rail around the deck edge should be set back about I inch; it will be made of 2½ by 4-inch yellow pine and set on edge. For fastenings I should use ½-inch galvanized iron drift bolts having the heads plugged so as to form a neat finish; these fastenings should be close together and will hold much better if they are staggered

and driven in out of line. Scuppers will of course be cut at the lowest portion of the rail as shown.

Building the deck house will be much like building a small house. It will have an inner and outer skin; the latter being regular clapboards. Inside the finish can be made of Homasote, or some one of the other waterproofed panels which have lately come into vogue for the finishing of rooms ashore. The windows will also be of the house variety and should have double sash with frames after the manner of the carpenter's building on the upland.

The roof will be laid on 2 by 3-inch yellow pine carlins set at 12 inches centers and crowned 4 inches in 10 feet. It will be laid with 7/8 by 3-inch tongue spruce and covered with 10 ounce duck set in marine glue. Around the edge the duck will be covered with 1½-inch half round oak

moulding.

A stout hand rail will be needed around the after deck and may as well extend some distance forward. This to look best should be made with turned wooden posts as shown and have an oak rail cap. The posts will be turned from 3 by 3-inch white oak and these should be set at 3 The rail cap should finish 2 by 4 inches feet centers. and be nicely rounded off to an oval shaped section. top of the rail should stand 2 feet 8 inches above the deck. It will be noted from the plans that the lower ends of the posts or stanchions are halved into the bulwark rail and should be made fast with 1/2-inch galvanized iron bolts. The awning stanchions are let through the rail cap and step in to deck; the top parts of the awning frame will be made of spruce as shown.

Inside, the bottom will be floored with 7/8 by 3-inch pine flooring; several hatches should be left for the purpose of getting at the bilge. One of these had better be cut in the passageway between the galley and the state room, while the other can be in the main cabin. The flooring will be laid on the bottom frames but additional beams will be needed as well; two between each of the frames will bring the spacing near enough. The sides should be ceiled or paneled with Homasote; this is a wood-like material which is both cheap and waterproof. Finish the entire cabin with this kind of material. The work of Finish the finishing goes on rapidly, and the effect when it is finished is excellent.

The cabin plan shows a lot of room; there is a separate motor compartment and in this there is full headroom for a length of 3 feet 1 inch. The flywheel of the motor protrudes from under the after deck just far enough for convenient starting. There will be room on the bulkhead above for switch board, fire extinguishers, etc. Under the deck to port is an ideal place for the Homelite electric plant with its batteries. Then there is also room here for two 110 gallon gasoline tanks which should be ample for the limited amount of cruising a vessel of this kind is likely to make. The motor room can also serve for a sleeping place for a paid hand and with this in view, instal a toilet under the bunk as shown. In addition to this there should be a folding basin and a small work bench; the latter arranged to fold against the bulkhead. forward of the starboard tank there will be a locker for lights, spare gear, paints, etc.

Entrance to the cabin will be through the companionway which is set 3 feet to starboard of the center line. main cabin will have 6 feet 6 inches headroom, enough for anyone making a living outside of a side show. will be two built in bunks which in the day will be used The dining table is designed to hinge on the Sulkhead and can thus be pushed up out of the way when not in use. A large hanging locker stands near the companion stairs for the accommodation of coats and wraps. A built in buffet, and dresser complete the furnishings of

this compartment.

The galley is a room 6 feet long by 4 feet 6 inches wide and has the usual equipment. There is nice room for everything including a No. 112 Shipmate range. And by the way if you expect to live on a boat for weeks at a time a coal stove is a most valuable asset. In damp weather it keeps things dry, in cold weather the cabin is warm and snug, and if it is very hot charcoal can be burned which makes a quick hot flame which soon dies out; and taken all in all, there is not a piece of equipment more vital to the comfort of the folks aboard than a Shipmate coal range. The ice box is located under the forward deck and has hatch above for replenishing ice. This saves lugging the drippy stuff through the cabin and getting on the carpet as well as the nerves of the housewife aboard.

There is a double stateroom to starboard with dresser and closet; the latter having a window of its own.

Of course there is a lot of room under the bunks for clothes and it would be well to have drawers for these things rather than to be forever shifting cushions and things to reach whatever happens to be needed at the time.

Two water tanks each side forward will carry 110 gallons each. The tanks will not be high enough to supply water by gravity; but this is just as well because when the water flows freely it is usually lavishly used, where if it has to be pumped by hand it is not used so quickly. Another item which proves again that human nature is uncon-Another

sciously lazy.

It seems that a boat of this kind, even without a motor, would be a fine habitation for the long months of summer. With a tender having power, supplies can be quickly brought off, and one has the means of getting about easily and in a most delightful way. There are thousands of sheltered waterways where Slopoke will lay as quietly as a cottage ashore, and where one can be away from mosquitoes, flies and the noises of the village and roads.

Arrangements have been made to supply interested readers with blue print copies of the drawings for Slopoke, to a scale of one-half inch to the foot, at moderate cost. Write to the Editor of MoToR BoatinG, 119 West 40 Street, New York, N. Y. for particulars.

#### Next Month

#### A SNAPPY 30-FOOT DAY CRUISER

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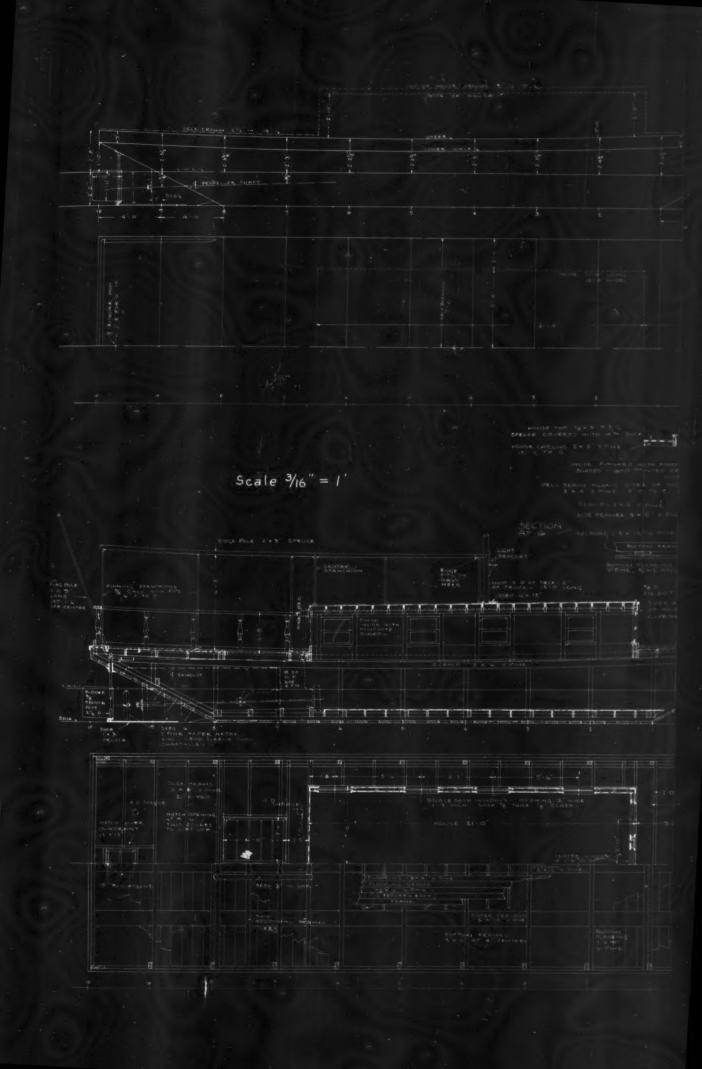
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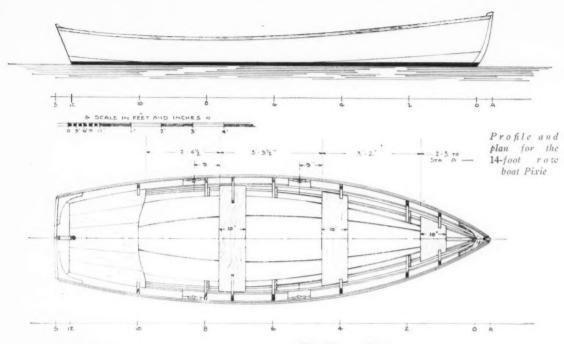
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### PIXIE, A V-Bottom Row Boat

An Excellent Boat, Easily Constructed and Suitable for an All Purpose Tender, to Be Used With or Without an Outboard Engine

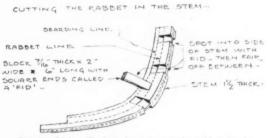
Designed Especially for MoToR BoatinG

#### By William Atkin

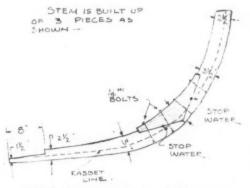
P IXIE while designed for rowing is a craft that can be used to good advantage with an outboard motor. She will make an excellent tender for any motor boat; but was designed for use with the house boat Slopoke shown in this issue. The little boat has good carrying capacity and will easily take a load of four or five persons in safety and comfort. There is ample freeboard to assure dryness, and enough sheer to make a smart looking craft. The V bottom type is in many ways superior to the round bilge model, and this is especially true from the standpoint of stability.

As a rowing boat she will pull easily; and under the urge

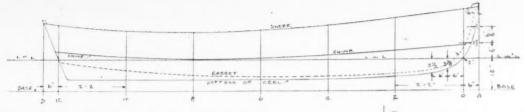
of one of the big twin outboard motors which are so popular now will have a speed of nearly 7 miles an hour. The construction is purposely light because any small boat that is to be used for a tender should be light; one has no idea of the advantage of a very light boat until it is necessary to draw it up or down the beach for launching, and by the same token, the disadvantages of a heavy boat are glaring.



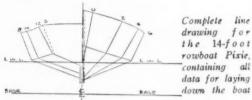
Detail which will show how to cut the rubbet in the stem piece

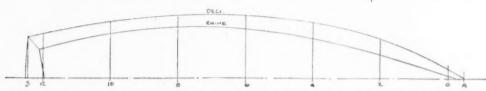


Method of securing parts in a built up stem, showing bolts and the stopwater



Pixie is 14 feet in over all length, her water line length Pixe is 14 feet in over all length, ner water line length is 13 feet, breadth 4 feet and draft 7½ inches. She will weigh approximately 150 pounds with oars and fittings which is reasonably light for a boat of this size. The freeboard at the bow is 1 foot 8 inches, and at the stern I foot 2 inches. It will be noticed on the drawing showing the lines that the base line is 12 inches below the L. W. L. and that the stations to which the frames are to be set are





2 feet 2 inches apart.

It is always the better plan to lay the lines of any boat which is to be built down on the floor full size, all boat builders do this and it is the only way in which to begin With the lines drawn either directly on the floor or on building paper it is a comparatively simple matter to get out the forms, the keel, the stem, and the stern; and with the expectation of having them fit together when

made, and as well fair up sweet and true.

It is best to first get out the keel and skeg. This will be made of 11/2 inch white oak and formed as shown on the There will be an apron piece along the top of the keel made of 7/8 by 31/2 inch white oak, the purpose of this being to form a rabbet for the ends of the bottom planks. The apron will be screwed to the keel with galvanized iron screws spaced at 8 inch centers. It is an excellent plan to paint between the hidden surfaces with white lead, for if this is done the life of the boat will be doubled.

The stem will be formed of three pieces of 11/2 inch white oak; at the deck this will be about 21/2 inches wide, at the water lines 4 inches and where it joins the fore end of the keel 21/4 inches. The fastenings between these pieces will

into the fore face of the stem. A rabbet must be cut in the stem and can best be accomplished as shown in the little sketch marked, cutting the rabbet in the stem. Since the planking will be 7/16 thick the rabbet will be of equal depth, and in width as shown by the bearding line.

The stern board will be made of 7/8 inch spruce, and because this part is 14 inches wide it will probably have to be made of two pieces with a matched joint in the center. I have found spruce to be a very good material to use for this purpose as it is light, strong and cheap. If it is hand planed, sanded and varnished it takes a fine finish. stern post will be made of

SIDE

white oak 11/2 inches thick and

directly on the frames and thus

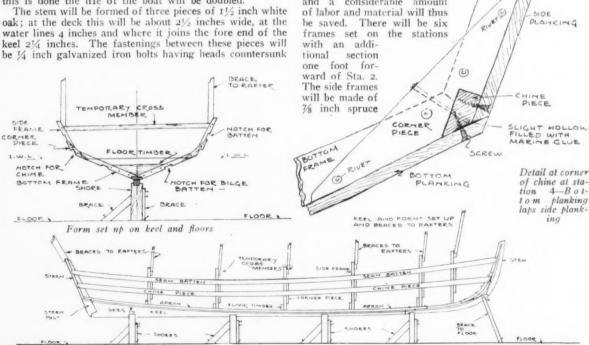
there will be no need for forms

and a considerable amount

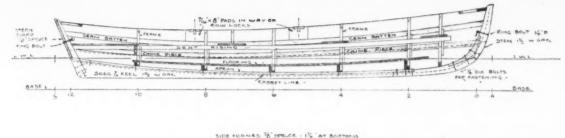
of labor and material will thus

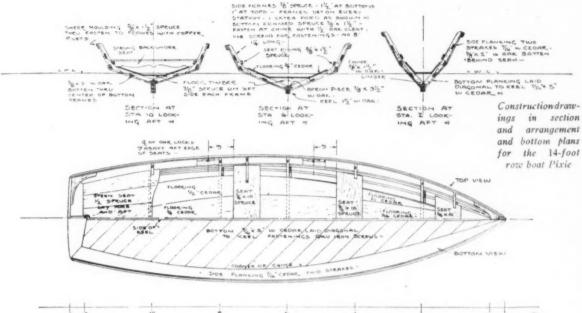
The planking will be laid

formed as indicated.



boat showing the relation of the several parts Completely assembled skeleton frame for the





 $1\frac{1}{2}$  inches at the bottom and I inch at the top; the bottom frames will also be made of spruce  $\frac{7}{2}$  by  $1\frac{1}{2}$  inches from keel to chine. The side frames will be fastened to those in the bottom by means of the  $\frac{1}{2}$  inch oak cleat as shown, the fastenings being No. 8 galvanized iron screws  $1\frac{1}{4}$  inches

cut before the frames are set up and much time will be saved thereby. It will be necessary to fit a temporary cross member across the frames so as to main-

BOTTOM
LAPS
SIDE
HERE

Details at corner of the chine at station No.

Details at corner bottom and sides meet

SIDE CORNER OF CHINE AT STATION 2 BOTTOM PLANKING 0 PLANKING -PIECE CORMER SEAM PIECE 0 PIVETS RIVET. RAME LANK tain the proper

long. At the keel the frames will be fastened with a 7% inch spruce floor timber. It will be noticed that the floor timbers are set a baft the frames, and that the cleats are set forward of the frames. If the design is carefully laid down on the floor the notches for the battens and chine pieces can be

ie, all ag at

STATION	A	0	2	4	6	8	10	12	5
		HEIG	HTS						
SHEER TO LW.L	1-8	1-74	1-4	1-1/2	0-11/2	0-10%	0-11/2	1-11/2	1-2
CHIME "		1-578	1-334	1-2	1-04	1-0/2	1-1	1-3	
RABBET " "			0.6/2	0.5%	0-51/2	0-64	0-8	0-11	
KEEL TO LW L		1-0	0-54	0.44	-	-	0-4%		
		-							
		HALF	BRE	HTOP	5				
DECK		0-334	1-34	1-9/2	1-11%	1-11-14	1-9%	1-7	1-3%
CHIME		0-1	0-9	1-34	1-7	1-7%	1-5	0-11/2	
DIMENSIONS TO OU	TSIDE C	F PLA	ONKIN	IG IN	FT	7. 12	N		

Table of offsets for Pixie containing all figures

spacing at the deck; this can be made of any convenient lumber on hand. One should be careful in fastoning these temporary pieces for otherwise the top ends of the side frames will be badly marred. One of the sketches shows a cross section of a frame set up and if this is (Cont. on p. 134)

## SKIMMER, A 1½ Liter Hydroplane

Popular European Racing Craft Designed to Comply with Class Restriction Particularly for Amateur Construction

Courtesy - The Motor Boat - England

MALL racing craft built to conform with the restrictions of the International 1½ liter class have enjoyed a tremendous popularity among the yachtsmen of England and France. Due to the high cost of fuel abroad, sportsmen have been more or less compelled to seek means of securing high power from very small engines. In the

United States, the fuel problem is not such a vital factor, and we have not yet been driven to the point of endeavoring to develop from 50 to 60 h.p. in engines of only 91½ cubic inches cylinder capacity. The design of the little hydroplane shown here together with the specifications have been especially prepared for amateur construction and at little diligent work will permit a boat to be completed according to this design before the next season opens.

The construction of a boat of this type does not offer very great difficulties from the point of view of the amateur builder. Particular care has been taken to keep the construction as simple as possible, and to avoid the use of special or unusual parts. In order to take care of the severe strains to which the hull will be subjected, while racing, the structural members

are all sufficiently substantial to fit the purposes intended. The design is in no way extreme, and with the reasonable care with which a boat like this should be handled, it will be found able to stand up in most any weather in which a little craft like this can be expected to be out. While the American engine manufacturers have not yet produced a machine of the power called for by the European designers in this class, there is no reason why a slightly larger engine

cannot be substituted. If any difficulty should be experienced in securing an engine of 1½ liters or 9½ cubic inches capacity, then one of our American 151 cubic inch engines would probably be found to answer as well.

The construction of this little boat is similar in every way

The construction of this little boat is similar in every way to that of other boats of the same general size and type, and

the many boat building articles which are repeated each month have covered all details at some time or another. It is not essential that this be repeated in complete detail with each new design, since the essential points are generally understood. Naturally the lines should be laid out to full size on heavy building paper before any of the construction is begun. A point to be carefully noted is the inter-pretation of the figures in the table of offsets. As is customary, all of these figures are given to the outside of the planking, and to the top of the The frames, which will deck. also serve as molds in this case, should be so cut and arranged that the thickness of the planking will be allowed for when these are laid out. As a convenience in constructing this boat, it will be found more sat-

is factory to build the boat bottom up. The construction can be carried on in this way, until the planking is completed. The frames, keel, transom, stem, etc. should all be assembled and erected in this manner, so that the sheer line of the boat will be about a foot and a half above the floor. This will bring the hull up high enough to be within easy reaching distance during the construction.

As a service and convenience (Continued on page 280)

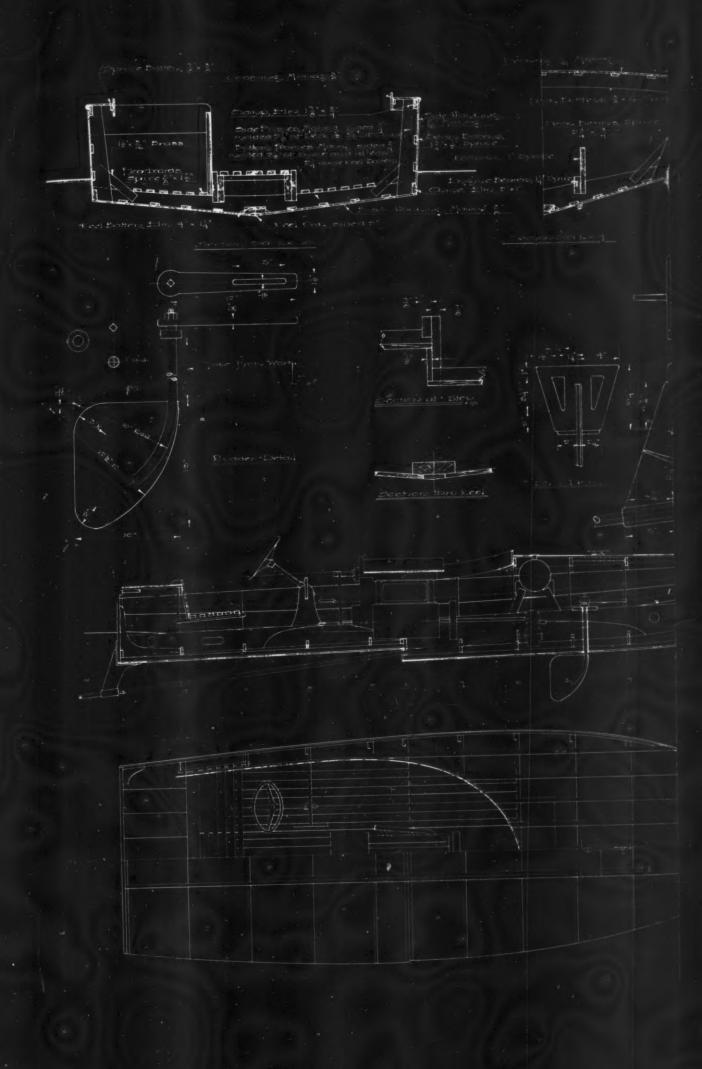
#### A 11/2 Liter Hydroplane

The tremendous popularity of the class of hydroplanes powered with engines of 1½ liters or 91½ cubic inches originally developed abroad, in England, and on the continent, has led to some attempts at International competition with boats of this type. In order to give our readers the benefit of European experience we are particularly fortunate in being able to reproduce the building plans and specifications for a typical boat in this class which was designed in England by C. Padgett Hodson, and is republished from the English magazine Motor Boat. As is well known, English engine builders have been able to develop vastly more powerful engines on this cylinder volume than we have in America. Some of their best machines have produced between 55 and 60 h.p. at about 4,000 revolutions per minute. If we ever engage in a competition with foreign boats of this class our domestic engine builders will have to do something startling to enable the United States to hold its own.

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MoToR BOATING'S BUILD A BOAT Series

SKIMMER A 1½ LITER Hydroplane

Designed by



119 West 40th Street New York



#### HOW TO BUILD

#### A Marine Engine Supercharger

Construction, Details and a Suitable Design for a Properly Proportioned Device to Suit the Model F-4 Scripps Engine and Provide It With Forced Induction

By David Gregg

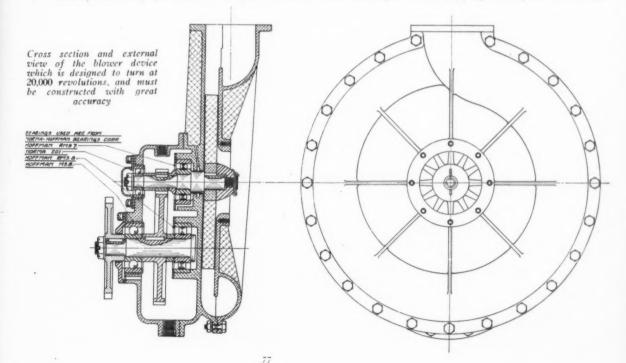
THIS series of articles was written to tell the readers of MoTor Boating about the supercharger, the latest development in the internal combustion engine field. In November we discussed in a general way the operation and use of the supercharger. The present article describes some of the details of construction, and the way in which the supercharger is applied to a specific engine.

In order to make this design applicable to as many classes of boats as possible the Scripps F-4 engine was chosen as this engine has a remarkable speed range; is light, powerful, and is used in all kinds of boats from cruisers to one class racing boats. Stock gears and parts are used wherever possible in the construction of the supercharger to reduce the cost, and to make the installation more simple it is planned to drive the low speed gear by roller chain from the propeller shaft. Of course the supercharger will not be in operation unless the propeller is turning, but the engine will run equally well at idling speed with the supercharger disconnected. As each installation brings up individual problems, it is suggested that those who plan to construct one of these superchargers communicate with the writer, who will be glad to offer his personal assistance wherever necessary.

The drawing below on this page shows a sectional view of the assembled supercharger. All parts have been made as simple and rugged as possible. Standard ball and roller bearings are used throughout. You must realize that the supercharger, although simple, is a very high speed piece of machinery, and every possible care should be taken in

its construction. The impeller, or rotating vane that compresses the air, is designed to turn at 20,000 r.p.m. It is cut from a blank of forged or rolled duralumin which may be purchased from the Aluminum Company of America at Niagara Falls, N. Y. In ordering the blank be sure and specify what it is to be used for, and the required physical characteristics as shown in the specifications on the drawing. The first machine operations consist of rough boring the hole and cutting the blank to the finished diameter and thickness. A milling cutter then roughs out the blades. When the final cut is made it will be necessary to shape a wood block to fit tightly back of the blade being cut, as the finished blades are so thin that they will deflect more than the amount of the cut. The hole is then bored to size and the keyway cut. It is important that the hole be kept within the limits specified as the impeller must be a definite forced fit on the shaft to keep from coming loose

For marine engine use the compressor castings may be made from a good grade of grey iron, although siliconaluminum alloy is generally used. The castings should be sound and free from blow holes. The flanges and rabbet are faced off to the finished size, and the holes around the flanges drilled. The two castings that contain the gear drive are then bolted together and dowelled. With the castings bolted together the bearing seats are bored out, thus assuring perfect alignment. After this has been done the air passages and collector ring are scraped smooth. A little time spent on cleaning up these parts will be well



repaid in better performance.

gear step up and The bearings come next. Boston gears are used, made from heat treated high carbon steel, and ground. They are keyed to their shafts and They are a light tapping fit as well. When all the parts are ready to assemble the impeller shaft should be into the impeller. pressed Now place the impeller and shaft on level knife edges, and balance the impeller by scraping the tips of the blades on the heavy until the impeller will balance in any position. The impeller shaft is then pushed

through its opening in the combined gear and compressor casting, and the roller bearing slid on the shaft. The pinion gear is now tapped on, and the outer half of the gear casing fastened temporarily. Slide in the outer bearing cage, the small ball bearing, and the retaining flange, and lock the bearing to the shaft. Now bolt on the outer half of the compressor casing. Push the impeller tight up against the gear casing, and measure the space between the bearing cage and the casting with a feeler gauge. Then pull the impeller forward until it strikes the compressor casing and again measure this distance. The difference between the two readings should be from .o40" to .o60". and represents the total clearance between the impeller and the sides of the compressor castings. One half of the figure, added to the smaller reading, will give the thickness of the shims that go between the compressor and the bearing cage to properly center the impeller in its casing.

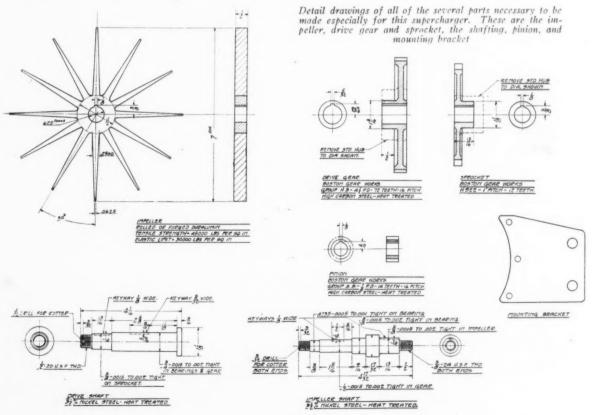
Remove the small bearing, take off the outer half of the gear casing, and install the gear drive. First the bearing is slipped onto the drive shaft, then the large gear keyed on.

	LIST OF PURCHASE	O PARTS.	
HAME.	MATERIAL.	ORDER BY	MANUFACTURER.
DRIVE GEAR	HIGH CARBOTT STEEL	GROUP H.8 - 4 2 P.D 72 TEETH - 16 PITCH.	BOSTON GEAR WORKS.
PINION	a P a	GROUP S.B I P. D. 14 TEETH - TEPITCH	P # P
SPROCKET		H922-1"PITCH-IZ TEETH	* * *
BALL BEARING		HORMA ZOI	HORMA-HOFFMAN BEARINGS CORP.
a n		HOFFMAN MS&	N 49 60
POLLER BEARING		HOFFMAN RMS7	# H 4
a7 41		HOFFMAN RMS 8	A) P B
IMPELLER	POLLED OR FORGED		ALUMINUM CO. OF AMERICA. MIAGRA FALLS, NEW YORK.

A list of the parts which can be purchased from various manufacturers of this type of equipment, and suitable for use with this supercharger

The outer gear casing is now put back for the final assembly. The bearing cage is placed over the drive shaft, and the outer bearing put on, followed by the retainer, the chain sprocket, and lock nut. Connect up the impeller shaft bearing with the proper thickness of shims behind the cage, and the assembly is complete. When the sprocket is turned by hand the impeller should spin freely without rubbing and the gears should be smooth and quiet.

A rigid framework should be built over the propeller shaft to support the supercharger which is mounted by the brackets shown in one of the details. A stock Boston sprocket is keved to the propeller shaft directly back of the engine. On the supercharger is a similar smaller sprocket. The two sprockets are connected by one inch roller chains. The ratio of the sprockets should be such that, when the engine is turning at its correct speed, the sprocket on the supercharger will be turning at approximately 3,900 r.p.m. The impeller will then be turning at 20,000 r.p.m. Care should be taken to line up the face of the sprocket on the supercharger (Continued on page 284)



### SMALL MOTOR BOATS

#### Their Care, Construction and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen Questions Submitted for the February Prize Contest

- What criticism, with suggestions for improvement, would you make of the catologs, merchandise, shipping methods and charges of firms doing a mail-order business in marine supplies and equipment?
   Submitted by D. McC., Cleveland, Ohio)

#### Taking Care of The Outboard Engine

Useful Hints and Suggestions Which Will Insure the Prompt Starting and Operation of the Little Engine Next Summer

Answers to the Following Question Published in the November Issue

"Describe and illustrate what to do to an outboard engine before laying up for the winter."

#### Service for the Outboard

(The Prize-Winning Answer)

NDOUBTEDLY, the best method is to crate it carefully and ship to the factory for a thorough cleaning and overhauling; however, as many of us are mechanically inclined, or desire to learn the little engine inside and out, then the following is a good schedule or plan to follow:

First, remember that the outboard is a delicate piece of mechanism, which will give good results if we keep its various parts clean and in proper adjustment; therefore, in all your work on it, be careful and painstaking, and you will

receive good results in return.

It is best to take the motor home to a warm and well lighted spare room or cellar, or to some convenient shop, fit up some kind of an emergency work bench or table (as better work can be done when one is working in a comfortable position), get a small vise, several small cigar or similar boxes to hold the various parts, some shipping tags or small squares of cardboard, some string or twine, a pencil, some emery-cloth, two or three small scrub

brushes, some lubricating oil and grease, some gasoline, plenty of old rags, some new ignition wiring, new spark plugs, valve grinding paste, small cans of enamel of the desired color and brushes for same, and the necessary tools you will need.

Clean the entire exterior of the motor with gasoline and wipe off perfectly dry; remove manifolds, cylinders, ignition system, water piping or tubing, carbureter, pro-peller, shafting and gears for same; clean each part thoroughly and inspect for breakages, excess wear, or need of replacement, tag and mark each part, so it will go back in its proper place, then place in one of the boxes; as soon each part has been moved, put each nut, bolt or screw back in its place; oil those parts placed in the boxes, which are of steel and iron, and which might rust; carry on until all these parts have been taken care of; unless there is considerable dirt

or wear evident with the pistons, rings and bearings, it is useless to remove them, as they can be cleaned well with gasoline and inspected while in place; however, work the rings around in their grooves and wash well with gasoline to loosen carbon, scrape off all carbon deposits, then oil well; in cases where the motor has had considerable running, examine every bearing for excess wear, adjusting or replacing those which need it; bear in mind that crankshaft or main bearings should be a very snug fit for both the two and four cycle types, while the connecting rod bearings for the two cycle should have a slight play, and for the four cycle they should be a snug fit; piston pin bushings should be a snug fit with no play, otherwise new bushings should be fitted camshaft bearings on the four cycle types should be adjusted to a snug fit; if the pistons are removed for any reason, be careful to get them back in the same cylinders, and in the two cycle types, with the baffle plate facing toward the intake ports; piston rings, where they show black from the gases blowing by, or are stuck in their grooves from carbon deposits, should be renewed with ones of the proper size, carefully fitted and pinned so the

Rules for the Prize Contest

ANSWERS to the above questions for the March issue, addressed to the editor of MoToR BoatinG, 119 West 40th St., New York, must be (a) in our hands on or before January 25, (b) about 500 words long (c) written on one side of the paper only (d) accompanied by the [senders' names and addresses.

The names will be withheld and initials used.

QUESTIONS for the next contest must reach us on or before January 10. The editor reserves the right to make such changes and corrections in the accepted answers as he may deem necessary.

The prizes ares For each of the best answers to the question above, any article or articles sold by an advertiser advertising in the current issue of MoToR BoatinG of which the advertised price does not exceed \$25, or a credit of \$25 on any article which sells for more than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

For answers we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR BoatinG of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prises selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prises ordered.

slots do not come opposite any of the ports or oil pipe openings; in getting new rings, it is generally best to have them from one to three thousandths of an inch oversize, fitting the cylinder bore by filing the slots until the clearance as recommended by the ring manufacturers, is obtained; clean out the base of all oil, grease and dirt; scrape all surfaces where gaskets are to be fitted; make new gaskets of either paper, asbestos or heat resisting composition, using either shellac, or graphite and oil when replacing; on two cycle motors having a check valve between carbureter and base, it is best to renew the spring. being sure to fit it with the same tension as the old one, and grind the valve in on its grinding comwith seat pound, or if badly worn, re-place with a new assembly; on the few four cycle motors. grind the intake and exhaust valves carefully, and inspect for loose stems in the guides,

and weak valve springs, replacing any part found defective; clean out all water jackets, piping, and ports, repack the water pump, and replace any defective or worn parts; in cases where jackets or pipes are clogged, blowing out with live steam is the easier way to clear them, while washing out with a hot solution of water and soda will also clean them if the deposits have not become too hard; clean and adjust the generator valve or carbureter; clean out the gasoline tank and tubing leading to the carbureter, as this generally gets dirty and sometimes has a gum ny deposit from lubricating oil; all ignition wiring and spark plugs should be replaced with new, the entire ignition assembly cleaned, oiled and adjusted; the propeller shaft assembly should be very carefully examined for corrosion or wear, replacing any parts necessary; when fitting new gears, there should be just a slight play between the teeth when in mesh, otherwise there will be a hum and excessive wear; try the propeller blades to see that they have not struck something and bent out of pitch, these can be readily brought back to shape; enamel all surfaces to the desired color; and order all the parts necessary for replacement.

As soon as the replacement parts are on hand, proceed to erect the motor, putting each part in its proper place and with the proper adjustment. The base gaskets and bearings will have to be air tight, so base compression will not leak out. Oil all interior parts well, to prevent rusting until the motor is to be used in the spring, and it is best to renew all grease in the grease cups, as well as grease the propeller

shaft assembly well. Unless the motor is to be left in a warm, dry place, it is best to leave off the ignition assembly, taking it home. Give the exposed metal parts, which are not enameled, a coat of oil, except the bronze or and brass fittings. you can leave the motor in safety for the winter.

In the spring, it will only be necessary to wipe off the oil from the motor exterior, polish up the bronze or brass

parts, place the ignition system in place, fill the tank, and start her up. You will have a motor which will be as good as new, in both looks and actions, which should repay you for your efforts in cleaning and adjusting.

V. L. S., WILMINGTON, Dela,

#### Laying Up the Little Motor

THE outboard motor is small and takes up very little room in the boat, but it has done its work just as faithfully as the big engine. Compare the tired backs and blistered hands of the days before the outboard motor, with the many side trips for fishing and hunting that you now take with ease, and you will agree that the little stern kicker should be just as well cared for as the big engine. Don't push your outboard motor off in one corner of the boat house or take it up to the garage and let it lay there until you get out the tender in the Spring and then expect the motor to act as if it appreciated the treatment and start off on the first spin. It may do that, but the chances are better for next season if the outboard motor is taken care of in the proper manner.

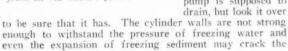
It will be much better, if you take the outboard motor home at the end of the season and store in a dry place. Before putting away for the Winter is the time to do the overhauling and make any needed repairs. If you can overhaul any motor you can overhaul the kicker. Even if you are not an expert mechanic, a little head work and close attention to where things came from and how they came apart will enable you to do the job in good shape. Clean out the carbon from the combustion chamber and under the piston rings. Take up any loose bearings and bear in mind

that the bearings of a small two cycle motor can not be set up to the same degree of tightness as in a four cycle motor. Replacement is the only satisfactory repair for parts worn beyond adjustment. In this connection, look carefully to the main crankshaft bearings. They are very seldom adjustable and any great amount of wear will allow a loss of crankcase compression, causing the motor to start hard. The old oil and grease should be washed from all parts, inside and out. Gasoline and a stiff brush are as good as anything you can use and the gasoline soon evaporates, leaving the parts clean and dry. Polish the bronze and aluminum and then give the outside a good heavy coat of steam cylinder oil. Be particularly careful about keeping any aluminum parts well greased at all times if the motor is used around salt water. The grease will prevent corrosion and tarnish and can be easily washed off at any time with The inside should receive the same treatment with gasoline. engine oil as the inside of the big engine. Coat the parts well when you put them together and pour some oil through the spark plug openings.

Don't forget the magneto in the flywheel. It is supposed to be damp proof, but a good drying out is beneficial to most any piece of electrical apparatus. The breaker points will probably need leveling off and resetting. The manufacturer's directions for this should be followed, but, if they have been lost or forgotten, try setting the points from .0010 to .0015. If too far apart hard starting will result and if too close they will stick when the motor is well warmed up. If

the magneto, as a whole or in part, is removed it must be replaced in exactly the same position as before. There is only one position in reference to the operating cycle of the motor at which the magneto will function properly.

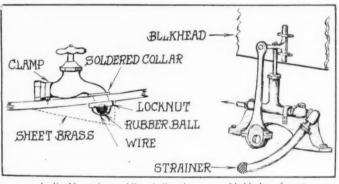
The jacket water should be dried by slowly running the motor without any water until it is quite warm, and any sediment removed. The pump is supposed to



casting.

Now that you have finished cleaning and adjusting your little friend, put him away with the same care. Nail up a good strong cleat, preferably in a closet. Build the closet if you will, just large enough to hold the outboard motor, and hang the motor in an upright position on the cleat.

Changes in temperature, in cold weather, will cause any metal to sweat. A circulation of air may evaporate these drops of moisture so that they will not be noticed, but, if the motor is wrapped with canvas, an old oilskin, or anything else, it will sweat considerably, and for all the protective coating of grease, rusty spots will be found when the covering is removed. Where the air is warm and the temperature varies but little through the winter, a covering of light material to keep out the dust can be recommended.



J. E. M. makes a bilge bailer from an old kitchen faucet

W. B. M., NEWBURGH, N. Y.

#### Care for Your Engine

A N advantage peculiar to outboard engines, which should be observed in preparing the engine for the long winter months during which more deterioration can take place than would be experienced in a whole season of running, is due to the mixture of cylinder oil and gasoline in the fuel tank.

Drain the fuel from the tank into a clean receptacle, and (Continued on page 131)

### Clearing The Bilge With Least Work

Mechanical Pumps Seem to Be the Favorite Devices for Doing a Necessary Task on Motor Boats. Other Practical Suggestions for Doing the Same Work

Answers to the Following Questions Published in the November Issue

"What method have you found most satisfactory and least laborious for disposing of the bilge water?"

#### Likes Pumps Best

(The Prize-Winning Answer)

THE problem of handling bilge water in a satisfactory way can be easily solved by the proper use of some of the good pumping equipment sold in the marine supply stores.

The simplest and most practical outfit consists of an ordinary 2 or 3-inch galvanized sheet iron hand pump, long enough to pump overside. These pumps with a stroke of about 3 feet will handle about ½ and 1 gallon per stroke respectively, and will pump a large amount of water, without too much exertion, in a short time. Two reasons these pumps are not used on all boats are that as a rule the arrangement of the boat prevents their use and the inability to store them on account of size.

The next scheme, which is in general use, is the small brass hand pump with either a suction hose and strainer or the suction end of the pump, after lifting a floor board, is placed in the bilge and the discharge hose is led over the combing or through a porthole. Most of these pumps are too small and if a large amount of water is to be pumped they are very discouraging. There are, however, some pumps of this type, about 2 inches in diameter and 3 feet long, which are extremely satisfactory.

There is also a built-in brass hand pump used on sail boats, about 1 inches in diameter, which has a flush deck plate in the deck and a suction pipe to the bilge. These are very good, but if there is oil and grease in the bilge it will make the side of the boat dirty, and if placed in the cockpit a large scupper is required to carry off the

There are on the market several satisfactory power bilge pumps which can be connected to the engine.

The simplest one consists of a small brass rotary pump mounted on a hinged arm with a friction pulley. A few turns of an adjusting screw presses the pulley against the flywheel. A suction hose with a strainer in the bilge leads the water to the pump and a discharge hose leads the water over side. One of the sketches shows this type of pump arranged to be operated from the companionway. A light spring holds the friction pulley from contact with the flywheel, on the other side a cord with a fairly stiff spring is provided to pull the pulley in contact with the flywheel. When under way, the cord is pulled up as required and the pump operates.

Another type of pump is an ordinary rotary pump with a pulley and belt to the flywheel or other part of the engine. The belt is snapped on when the engine is running and when the bilge is empty the belt is pushed off again.

There is also a similar outfit consisting of a pump with a friction clutch and a sprocket chain connection to the engine. The clutch lever can be connected with levers to any position for control.

There is also a plunger pump equipped with gears to connect with the propeller shaft. The gears are arranged so as to mesh and unmesh by means of a lever which can also be arranged for control from any point.

In all small hand and power installations it is necessary to have a good suction strainer to keep out chips and dirt. This will prevent stoppage and damage to the pump. A good strainer can be made of a brass awning fitting with the legs spread apart and covered with a piece of bronze or monel metal fly screening soldered or tied in place. It is a good plan to use brass pipe for the suction line, so as to avoid having rust chips getting into the pump. The outboard connection should be placed well above the water line, to prevent back pressure, to avoid drawing water into the boat should the pump be reversed, and, should also be placed where the stream may easily be observed. The stream will indicate whether the pump is operating properly, also when it should be stopped as running a rotary pump without water would cause excessive wear.

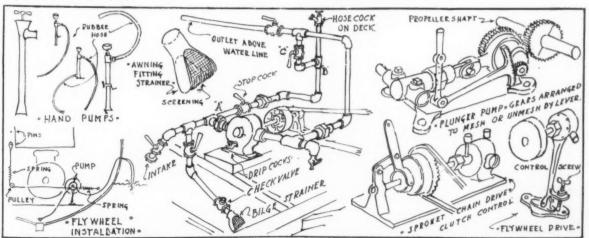
The center sketch shows a pump installation used on a boat yard launch. The piping is arranged to do three things: First, pump out the bilge, second, pump clean water for washing down decks, etc., third, pump out other boats by using the deck hose as the suction line. If the last item is not desired simply leave out piping A to B and valve C. A check valve is indicated next to the bilge strainer to keep the pump primed and to prevent flooding should the stop cocks be opened inadvertently.

All piping and pumps should be provided with drip cocks or plugs to allow drainage to prevent damage due to freezing.

A. G. W., College Point, N. Y.

#### A Neat Bilge Bailer

THE disposal of bilge water, especially on a sultry summer's day, is a disagreeable task even for the most ardent motor boatist.



.1. G. W. has mentioned and illustrated most every type and form of pump known to the bilge pumper

There is a tendency with some boatowners to make the engine pump take care of the bilge water, but this practice of running dirty bilge water through the water jackets is both unwise and unsatisfactory.

Some engine manufacturers have had the foresight to install a bilge pump integrally with the engine unit, but until this practice becomes common recourse will have to be taken to the time honored method of disposing of the bilge water by hand or by mechanically operated devices.

An ordinary brass faucet can be made to serve as an automatic bilge drainer by soldering or brazing a collar around the spout and threading a locknut at its bottom end, as shown in the illustration.

The rubber ball which will act an automatic stopper should have a diameter somewhat larger than the opening of the faucet, in fact best results will be had with one that will allow about two thirds of itself to go into the spout opening.

Heavy brass wire is soldered to the mouth of the faucet allowing the rubber ball enough clearance-1/8 inch being approximately correct.

A hood of sheet brass about six inches long fastened

over the outboard end of the spout will produce a vacuum which will be suf-ficient to drain off the bilge water speeds of eight miles an hour and over.

While the rubber ball will effectually stop the inrush of water while the boat is at rest, absolute safety in this respect is assured by shutting of the faucet in the conventional way.

In most any boat shop will be found a passe motor with a perfectly good circulating pump of the plunger variety, that can be made into a power bilge pump with a minimum of Outside of

the pump itself all that will be necessary will be a block of wood to serve as a base for the pump.

The plunger type lends itself more readily to this work than the rotary, since the gears of the rotary are apt to be worn, whereas with the plunger type no matter how much it has been run, it will admit of tight packing.

A suitable position for this pump will be aft of the motor where the slide blocks can be fastened to a bulkhead either in the after part of the cockpit, or under a stern seat.

A rubber hose on the suction end will lend itself readily to carrying the point of suction to the lowest part of the hull, while a similar hose will carry the water to a most convenient outlet.

J. E. M., Norwich, Conn.

#### An Automatic Ejector

HE sketch shows an outfit that has proven to be very satisfactory for removing bilge water. Be-fore going into the operation of this arrangement,

a few words might be said regarding other systems. It is to be conceded that the outfit desired should be a labor saver. After pumping out a boat by hand the owner immediately considers a method that would save all the tiresome labor involved.

A small pump geared or belted to the engine is a very satisfactory arrangement and if the craft has an extensive electric system, a motor driven pump can be installed. For automatic operation probably the best outfit to use would be the one having a side to side by action of waves. This would not be of any service on lakes or rivers, as the water on such bodies are comparatively smooth.

The outfit illustrated makes use of air from the whistle The air entering the ejector, which may be purchased from any mill supply store for a small sum, creates a vacuum in the suction pipe and discharges same overboard through the discharge pipe.

H. S., Atlanta, Ga.

Disposing of the Bilge Water

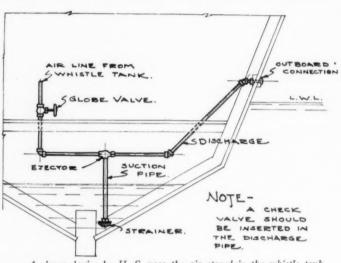
HERE are several good methods of ridding the bilge of water. Where a boat has sufficient battery capacity and the owner a nice fat pocket book, a self contained electric pumping unit will make an ideal installation. It is only necessary to press a button to start or stop this outfit. Look through the ads and you will find a pump driven by a swinging weight which is set in motion by the rolling of the boat. This pump requires no attention at all and will keep a boat, anchored where there is nearly always a roll, as dry as any pump can but, if the anchorage is well protected so that the boat rolls very little, the pump will not operate sufficiently to keep a leaky boat dry. Bilge pumps driven by a cam on

the propeller shaft and provided with a means of throwing them out of gear are listed by several marine supply dealers. Their operation is satisfactory but, this type of pump can not be operated unless the propeller shaft is turning. There is also a stock article in the bilge pump line which is driven by a friction pulley against the fly wheel. Automatic bilge drainers, which operate by suction produced by the speed of the boat through the water, are stocked some dealers. With a draft of 6 inches these drainers

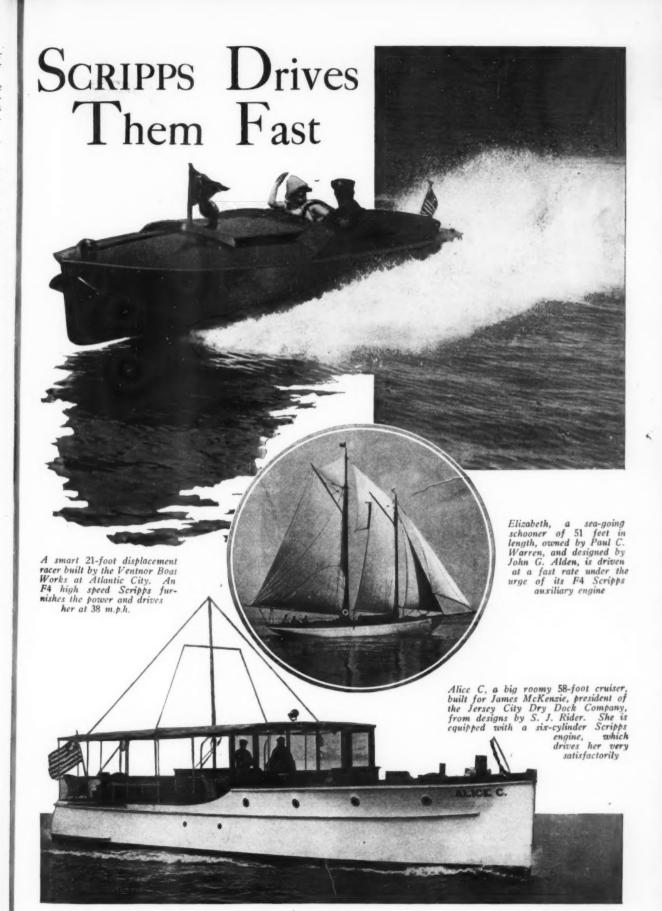
will operate at a speed of 7 m.p.h. More speed is required as the draft increases and their use is not very general. Pumps have been devised to operate by the pulsations of a single or double cylinder engine, and a compressed air syphon will lift the water and discharge it overboard the same as a steam syphon.

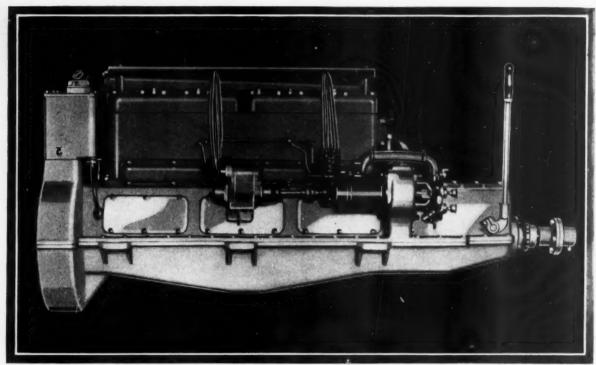
You can buy any of these pumps but, the man who has had his pocket book steam rollered for a new engine, might like to rig up a pump of his own. Before going to work, look over the engine from fly wheel to shaft flange to determine where it will be most practical to connect the pump drive. The fully inclosed engine may present difficulties in the way of driving the pump directly from the engine, but there is always the propeller shaft to which a split pulley We have used a split pulley clamped can be clamped. around the flange hub between the engine and reverse gear with a slack belt and idler for eight years, and after the first year, which it took us to find a satisfactory lacing, have not had the least bit of trouble. We use a leather belt with Clipper lacing and had a flange welded to the lower side of the pulley so that there would be no chance for the belt to run off. On most motors having the pump shaft or generator shaft exposed, a split pulley grooved for ½-inch round belt can be clamped to the shaft and the bilge pump driven from it.

For several reasons it is not advisable to use the circulating pump for pumping out the bilge. Chips, bits of waste or cloth, strings, grease, sand, etc., will find their way into the bilge. While an efficient (Continued on page 131)



A clever device by H. S. uses the air stored in the whistle tank





Portside of the new six-cylinder Kermath engine, showing the neat arrangement of the Bosch Magneto, distributor and generator and generator

## The Finest SIX Yet

The Popularity of the Six-Cylinder Type Engines Brings Out a Brand New Machine, Built by The Kermath Manufacturing Company

THE remarkably successful performance of an experimental six cylinder engine, produced by the Kermath Manufacturing Company during the summer, and

Manufacturing the enthusiasm with which it was received by those who became aware of its existence has led the company to embark on an ambitious program of production of machines of this type. A new building is under construction for the particular joh of turning out these six cylinder machines.

As far as the engine itself is concerned, it will be of 495 cubic inches displacement, with a bore of 43% and a stroke of 5½ inches and rated at 100 h.p. Following the usual practice of the Kermath Company, the

math Company, the crankshaft will be very large, 2½ inches, and bored out for a full pressure oiling system. The cylinders will be in a single casting with removable heads in sets of three. The ignition will be double, using both a Bosch magneto with

an impulse coupling, and a Bosch battery distributor. Pistons will be Lynite, of the split skirt type on the high speed engine, and cast iron on the slow speed engine, both

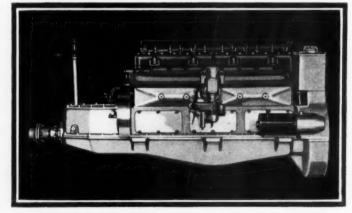
being fitted with oil return rings.

A Paragon reverse gear with special ball bearing pilot, and a large double row standard ball bearing on the propeller shaft to take up the radial and thrust loads will be fitted. In order to prevent oil leakage from the engine base, the rear bearing is provided with a stuffing box.

An electric starting motor and generator supplied by the Bosch Company, will be compactly built into the machine.

Points taken from the horse-power curve of the new Six

show that at a speed 600 r.p.m. the horse-power developed was 38—increasing uniformly the curve is nearly straight. As the r.p.m's. increase we find 63 h.p. at 1,000—78 at 1,2000—90 at 1,500, and 105 h.p. at 1,800 revolutions.



Starboard side of the new Kermath six, showing the accessibility of camshaft and also the large hand hole plates to the base

# America's Leading Marine ENGINE BUILDERS

An Alphabetical Catalog of All Sizes and Varieties of Marine Engines Arranged for Easy Selection and Comparison

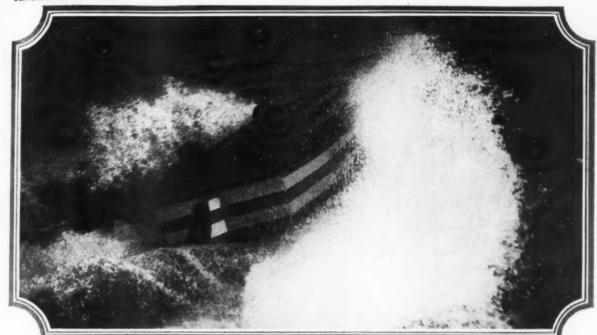
Outboard Motor Manufacturers are Completely Tabulated on page 288

	Horse	Bore and	No. of			В	rennan Mot Syracuse,	or Mfg. Co. N. Y.		BRENNAN STANDARD				
Model	power	stroke	Cylrs.	Cycle	R. P. M.	Weight	Lubrication	Reverse gear	Starting device	Ignition system	Spark plugs	Carbureter		
M-4	20	4x5	4	4	1000	650	Pressure	Own	Bosch		Champion.	Stromberg		
M-4	30	4x5	4	4	1500	600	Pressure	Own	Bosch	A 4	Champion.	Stromberg		
D-4	35	43/4x5	4	4	1000	850	Pressure	Own	Bosch	Atwater, Kent,	Champion.	Stromberg		
D-4	40	436x5	4	4	1500	800	Pressure	Own	Bosch	Bosch	Champion.	Stromberg		
E-4	35	436x5	4	4	1000	900	Pressure	Own	Bosch		Champion.	Stromberg		
E-4	50	436x5	4	4	1600	850	Pressure	Own	Bosch	Magneto	Champion.	Stromberg		
D-6	75	43/2×5	6	4	1800	1000	Pressure	Own	Bosch	OF both	Champion.	Stromberg		
60	60	4x51/2	6	4	1800	900	Pressure	Own	Bosch	both	Champion.	Stromberg		
100	100	5x63/2	6	4	1800	1500	Pressure	Own	Bosch		Champion.	Stromberg		

	Warra	Bore and	37			1280	Huffalo Gasoi -1290 Niagara					BUFFALO
Mode	Horse l power	stroke			R. P. M.	Weight	Lubrication	Reverse ge	ar Starting device	e Ignition system	Spark plugs	Carbureter
	4	3x4	2	4	700	240	Gravity	Own		Connecticut Distributor.	Champion.	Schebler
В		334x5	2	4	600	400	Gravity	Own	None	Connecticut Distributor.	Champion.	Schebler
B.A	30	33/4×5	4	4	1600	690 A-560	Circul. Splash	Master	Bosch	Bosch magneto	Champion.	Zenith
S	20	3¾x5	4	4	800	I-710 A-745	Circul. Splash	Master	Leece-Neville	Bosch magneto	Champion.	Schebler
M.Y	30	434×5	4	4	800	I-929	Circul, Splash	Master	Leece-Neville	Bosch magneto	Champion.	Schebler
C.M	60	536x7	4	4	900	A-1430	Pressure Feed Cir-					
						I-1730	culating	Master	Leece-Neville	Bosch magneto	Champion.	Schebler
C.E	80	634x9	4	4	800	A-2100	Pressure Feed Cir-			_		
						I-2600	culating	Master	Leece-Neville	Bosch magneto	Champion.	Schebler
P.P	12	5x61/2	2	4	400	1170	Manzel Mech. Oile	r Own	Leece-Neville	Bosch magneto	Champion.	Schebler
J	15	6x73/2	2	4	350	1400	Manzel Mech. Oiler	Own	Leece-Neville	Bosch magneto	Champion.	Schebler
K	22	7×9	2	4	350	2100	Manzel Mech. Oiler	Own	Leece-Neville	Bosch magneto	Champion.	Schebler
P.P.P.	24	5x61/2	4	4	400	1960	Manzel Mech. Oiler	own	Leece-Neville	Bosch magneto	Champion.	Schebler
J.J	30	6x736	4	4	350	2525	Manzel Mech. Oiler	r Own	Leece-Neville	Bosch magneto	Champion.	Schebler
K.K	45	7x9	4	4	350	3655	Manzel Mech. Oile:	r Own	Leece-Neville	Bosch magneto	Champion.	Schebler
M.K.K	50	71/2×9	4	4	350	3800	Manzel Mech. Oile:	r Own	Leece-Neville	Bosch magneto	Champion.	Schebler
K.K.K	70	7x9	6	4	350	4850	Manzel Mech. Oile	r Own	Leece-Neville	Bosch magneto	Champion.	Schebler
M.K.K	K. 80	71/2×9	6	4	350	5100	Manzel Mech. Oiler	r Own	Leece-Neville	Bosch magneto	Champion.	Schebler
W	100	10x12	4	4	300	8200	Manzel Mech. Oiler	Own	Leece-Neville			
									or air starter	Bosch magneto	Champion.	Schebler
W.W.	150	10x12	6	4	300	. 12,800	Manzell Mech. Oile	r Own	Leece-Neville			
									or air starter	Bosch magneto	Champion.	Schebler
R	200	536x7	6	4	1400	A-2035	Pressure Feed Circu	-				
						I-2600	lating	Master	Leece-Neville	Bosch magneto	Champion.	Two Strom-

		62		erfection Mot Boulevard, De		ch.	CAILLE
Horse power	Bore and stroke	No. of Cylrs.	Cycle	R. P. M.	Weight	Lubrication	Carbureter
21/2	31/4×31/4	1	2	800	125	In fuel	Schebler
4	374x31/2	1	2	800	150	In fuel	. Schebler
6	436x436	1	2	800	200	In fuel	. Schebler
6	434×434	1	2	800	250	In fuel	. Schebler
8	376x31/2	2	2	800	280	In fuel	. Schebler
8	534x5	1	2	500	335	In fuel	. Schebler
8	376x31/2	2	2	850	220	In fuel	Scheblet
14	434×43/2	2	2	750	350	In fuel	Schebler

134   33234   1 2 100 45	Model	power 134		w.					dy Co., Inc		CAD	Y OF CA	NASTO ADYFO
2. 134 33234 1 2 100 45 In fuel. Own Champion 3. 3 35434 1 2 700 90 In fuel. Own Champion 4. 4 4444 1 2 700 140 In fuel. Own Champion 8. 8 4444 2 2 700 140 In fuel. Own Champion 8. 8 4444 2 2 700 140 In fuel. Own Champion 8. 8 4444 4 700 300 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 700 305 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 700 325 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 100 305 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 1000 350 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 1000 350 Splash. Own Hand or electric. 8. 12-16 3344 4 4 1000 350 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 1 1000 400 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 1000 350 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 1000 350 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 1000 500 Splash. Own Hand or electric. Atwater-Kent 8. 12-16 3344 4 4 1000 500 Splash. Speedway Bosch. Bosch Magneto. Champion 8. 12-16 3444 4 4 1000 500 Splash. Speedway Bosch. Bosch Magneto. Champion 8. 12-16 3444 4 4 1000 500 Splash. Speedway Bosch. Bosch Bosch. Rajah. 8. 12-16 3444 4 4 1000 500 Splash. Speedway Bosch. Bosch Bosch. Rajah. 8. 12-16 3444 4 4 1000 1850 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 8. 12-16 3444 4 4 1000 1850 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 8. 12-16 3444 4 4 1000 1850 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 8. 12-16 3444 4 1000 1850 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 8. 12-16 3444 4 1000 1850 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 8. 12-16 3445 6 4 1200 4000 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 8. 12-16 3445 6 4 1200 1850 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 9. 11-15 5445 6 4 1200 1800 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 9. 11-15 5445 6 4 1200 1800 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 9. 11-16 5445 6 4 1200 1800 Pressure. Speedway Bijur. Bosch & Delco. Rajah. 9. 11-16 11-16 11-16 11-16 11		134	stroke	No. o Cylrs	Cycle	R. P. M.	Weight	Lubrication	Reverse gear	Starting device	Ignition system	Spark plugs	Carbure
3   3   3   3   3   3   4   1   2   700   90   In fuel   Own   Champion										_	Own	Champion.	Monar
6 3 3 4 3 4 3 4 2 2 700 140 In fuel	**********	3		1	2	700	90	In fuel				Champion.	Monas
12-16   336x4   4   4   700   300   Splash   Own   Hand or electric   Atwater-Kent   Bosch Magneto   Champion	**********				2	700	140						Monas
Section   Sect	*********					700							Monar
12-16	*********												Monas
Bosch Magneto   Champion   Cham	********				_							Olin pions	2000
DUMA   20-25   334x4   4   1500   400   Splash   Own   Hand or electric   Atwater-Kent   Bosch Magneto   Champion											Bosch Magneto	Champion.	Holley
DMZC.   30 334x4 4 4 2000 350 Splash.   Own   Hand or electric.   Atwater-Kent   Bosch Magneto.   Champion	ORLA		.,.								Bosch Magneto	Champion.	Holley
Consolidated Shipbuilding Corpn.   S   Model   Horse   Bore and No. of power   stroke   Cylrs.   Cycle   R.P.M.   Weight   Lubrication   Reverse gear   Starting device   Ignition system   Spark plugs   Spark   Spark plugs	100				•			•			Bosch Magneto	Champion.	Holley
Model   Horse   Bore and No. of power   stroke Cylrs. Cycle   R.P.M.   Weight   Lubrication   Reverse gear   Starting device   Ignition system   Spark plugs   Spark plu	M2C	30	39474	•	•	2000	350	Splash	Own	nand or electric		Champion.	Zenith
Model   power stroke Cylrs. Cycle R. P. M.   Weight Lubrication   Reverse gear   Starting device   Ignition system   Spark plug   Spa												SF	EEDW
			Bore and l	No. of	Cycle	R. P. M.	Weight	Lubrication	Reverse gear	Starting device	Ignition system	Spark plugs	Carbure
		28	4x436	4	4	1200	560	Splash	Speedway	Bosch	Bosch	Rajah	Stromb
### ### ##############################				4									Kingsto
March   180   18													
RR-6.   180   594x7   6   4   1300   2200   Pressure.   Speedway   Bijur.   Bosch & Delco   Rajah   RR-8   230   594x7   8   4   1300   2600   Pressure.   Speedway   Bijur.   Bosch & Delco   Rajah   RR-8   230   594x7   8   4   1300   2600   Pressure.   Speedway   Bijur.   Bosch & Delco   Rajah   Ra													
RR-8.   230   55½x7   8   4   1300   2600   Pressure   Speedway   Bijur   Bosch & Delco   Rajah													
Speedway   Bijur   Bosch & Delco   Rajah   Rajah   Bosch & Delco   Rajah   Rajah   Reverse gear   Bosch & Delco   Rajah   Rajah   Reverse gear   Starting device   Ignition system   Speedway   Speedway   Bijur   Bosch & Delco   Rajah   Rajah   Reverse gear   Starting device   Ignition system   Carlyle-Johnson   Machine   Co.   Manchester, Conn.													Stromb
Carlyle-Johnson Machine Co. Manchester, Conn.  Horse Bore and No. of power stroke Cylrs.  Model Horse Bore and No. of power stroke Cylr	R-8	230	5%x7	8			2600		Speedway				Stromb
Carlyle-Johnson Machine Co.  Manchester, Conn.  Horse Bore and No. of power stroke Cylrs.  300 6.3x7.09 6 4 1650 1650 Pressure.  Bore and No. of power stroke Cylrs.  Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Compower stroke Cylrs.  Bore and No. of power stroke Cylrs.  Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Compower Stroke Cylrs.  Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Compower Stroke Cylrs.  Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Spark plus Spark plus Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Spark plus Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Spark plus		. 115	634x81/2	6	4	1200	4800	Pressure	Speedway	Bijur	Bosch & Delco	Rajah	Stromb
Carlyle-Johnson Machine Co.  Manchester, Conn.  Horse Bore and No. of power stroke Cylrs. Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Carlyle-Johnson Hand.  Model power stroke Cylrs. Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Carlyle-Johnson Hand.  Model Horse Bore and No. of power stroke Cylrs. Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Carlyle-Johnson Hand.  Model Horse Bore and No. of power stroke Cylrs. Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Spark plus Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Spark plus Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Spark plus Cycle R.P.M. Weight Lubrication Reverse gear Starting device Ignition system Spark plus Atwater-Kent. Champion.				6	4	1200	4000			Bijur	Bosch & Delco		
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## arl Fisher's

The first of the Scripps powered 18foot one-design class run a bouts which promise some new thrills in motor boat racing

# One Design

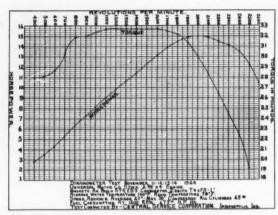
Novel Series of New Speed Boats to Introduce An Original Feature at Miami's Races

TEN automobile speedway drivers are going to try their hand at the wheel of speeding motor boats in the annual mid-winter regatta of the Biscayne Bay Yacht Club, at Miami Beach, March 20-21. On the speedways they now drive one-man cars with engines not exceeding 122 cubic inches piston displacement at the rate of 125 miles an hour. These same stars will have single crewed runabouts with Scripps F-6 engines, of 335 cubic inches to handle in the six 12 mile heats on the two days. In the trials of the little boats, they have shown speeds of 42 miles an hour, without being thoroughly tuned up. These boats have been designed and built by Ned Purdy, of the Purdy Boat Works, Trenton, Mich. They are 18 foot runabouts with 5½ foot beam and equipped with outboard rudders. They are very seaworthy little craft and can battle a chop as well as they run on smooth water.

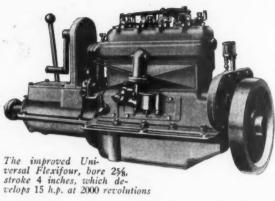
The idea of the race and the boats came from Carl G. Fisher, the originator of the Indianapolis Motor Speedway and its 500-mile international sweep- (Continued on page 300)



## Universal FLEXIFOUR



Power and torque curve for the Universal Flexifour, an improved engine of small size



ANY improvements have been built into the new Universal Flexifour marine engine which has been brought out to replace the earlier type 9-12 While this new machine has the same bore and stroke, and also the same overall dimensions as the old machine, the actual horse-power produced by the new Flexifour is 25 per cent greater than that secured from the old one. At the same time a considerable saving in fuel consumption has been effected, which amounts to as much as 10 per cent. The speed power curve reproduced here, shows the result of a test conducted on this machine by the Central Service Corporation at Indianapolis. this it will be noted that the maximum power is developed at 2,000 revolutions, and that the increase is quite uniform

from as low a speed as it is possible to run the machine. The increase in power, and the reduction in fuel consumption have been brought about by new developments in the camshaft design, and carburetion, as well as the Ricardo principle of cylinder head construction.

## An Improved RED WING

WNERS of large cruising and commercial boats, as well as the larger size runabouts and passenger boats will be interested in the Big Chief, and the Big Chief, Special Red Wing Thorobred engines, which they are bringing to the New York Motor Boat Show.

These engines, with a bore and stroke of 5 by 7 inches, have been successfully installed on many big boats during the last season. The Big Chief Special is a larger size, with a bore and stroke of 534 by 7 inches, which gives excellent service at speeds up to 900 revo-lutions. The high speed type will turn as fast as 1,400 revolutions.

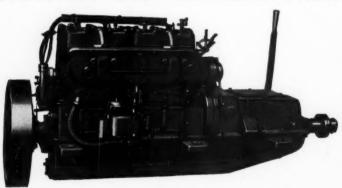
These machines are all of the four cylinder, four cycle type, and are complete power plants with a built-in reverse

gear, and a two unit, 12 volt starting system. The big feature of the engines is the large size of the shafts and bearings. They have over 140 square inches of main bearing area. Such strength found in the generous size of all working parts serves to

prolong the life and usefulness of the engine.

Both of these machines are designed for twin screw installation, with right and left hand types, especially for these purposes. In these cases the exhaust manifold and carbureter intakes are on the outboard sides of the machines.

Much effort has been expended by the Red Wing Motor Company on their smaller machines, notably the models AA and KK. notably These have been entirely re-designed. bringing them strictly up to the minute in every particular. 18-24 h.p. size has been improved with new cylinder blocks, incorporating a detachable head. A special hot spot manifold has been added, with a new model S Schebler carbureter, which has



The Red Wing Motor Co.'s model AA new type, with detachable cylinder heads

proven very successful.

The small double cylinder machine which is half the size of the AA, is also arranged with the detachable head, making it one of the most popular for small boats. The bore and stroke of both machines is 334 by 434 inches.



#### The Admiral's "Barge" is Valsparred

First to land in any port—always entrusted with special despatches—the U. S. Navy speed-boats are the pride of their picked crews.

And they are constantly maintained in perfect condition. The huge 12-cylindered motors operate with perfect smoothness, brasses shine, the polished mahogany decks are immaculate, their varnish gleaming!

No easy task to keep these exposed surfaces ship-shape—especially in rough weather, when tons of sea-water, laden with sharp, cutting sand, hammer every inch of the beautiful wood! To insure a finish that will stand up under such terrific stress, nine out of ten speedboats in our Battle Fleet are Valsparred.

"Valspar is the only finish we've ever used that has withstood the action of the sea," asserts Chief Boatswain's Mate W. C. Kessler, commanding the speed-boats of the U. S. S. Melville.

Absolutely waterproof, Valspar will not check, peel or whiten in water, no matter how long it is immersed. Incredibly tough and elastic, it withstands rubbing, vibration, abrupt changes of temperature. And it dries in less than 24 hours. On every score Valspar is the varnish for marine use!

#### Postscript

Valspar is made only by Valentine I Company. On account of its toughness, water propless and beauty, Valspar has a wide range of sues—air and sea planes, dirigibles, the eyes of submarims, bridges on destroyers—in fact, everywhere an absolutely dependable and permanent warnish is required.

#### This coupon is worth 20 cents to \$1.60



VALENTINE & COMPANY M. B. 1-25
460 Fourth Ave., New York

I enclose dealer's name and stamps, amounting to 20c for each 40c sample can checked at right. (Only one sample of each product supplied at this special price. Write plainly.)

Valspar Instruction Booklet with Color Charts, 15c extra.

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Valspar Booket

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# What is the Market for USED BOATS?

Demand for Craft This Year Probably to Exceed the Supply — New Boats if Properly Maintained Show Very Little Depreciation in Value and Bring Fair Prices

By J. A. MacDonald

Sales Manager, Henry J. Gielow, Inc.

ACH season numerous additions are made to the Yachting fleet in all sizes and types of yachts, making this form of sport and pleasure most popular. It is the business of the modern yacht broker to keep

It is the business of the modern yacht broker to keep records of all these various boats together with the detailed information as to their size, types, general construction and materials used, power plants, cabin arrangements, their speeds and an approximate idea as to their operating cost; for this purpose a progressive organization maintains a staff of specially trained men; men who are familiar with boats; men who are in a position, due to their training and experience, to determine the approximate values of these craft and who can give expert advice to the prospective seller, purchaser or charterer.

In the so-called motor boat class it is possible with a

moderate outlay to obtain a comfortable, roomy and attractive yacht that will accommodate a fairly good size party.

As an illustration take the av-

erage 45 foot bridge deck motor boat or cruiser, having one double stateroom with two regular sleeping berths and a large main cabin or dining saloon, which can be also utilized as a stateroom, giving sleeping accommodations from four to six people; such a craft in good running condition can be obtained at a price ranging from \$6,000 to \$8,500. size boat is powered usually with heavy duty gasoline motor whose fuel consumption runs approximately 3½ to 6 gallons of gasoline per hour at a cruising speed of about ten miles an hour. It is called the one-man type of craft, operated by a combination Captain-engineer and general utility man. When on a long cruise with a party of from four to six it is generally the custom to take on another man who acts

in the combined capacity of a cook-steward and a general all around service man. With such a boat it is possible to cruise along the Atlantic Coast, Long Island Sound, Canals, Great Lakes, and even to the charming cruising grounds of Florida.

Going into a somewhat larger boat an excellent illustration is the 65 foot twin screw motor yacht, wherein we find two fine staterooms with two regular berths in each room and a regular bathroom. This provides accommodations for four people very comfortably. Generally the dining saloon of a boat, such as this is in a sunken deck house forward and will accommodate two people nicely, with the galley below and the crew quarters located in the bow. Such a boat is operated usually with a combination Captain-engineer who controls the boat from the bridge deck; a combination cook-steward, and a general all around sailor, making a total of three in the crew. It is possible to obtain such a craft in first class condition for between \$15,000 and \$25,000. On such a boat one can live for the entire summer cruising along the coast; in fact, there is no place generally speaking from Eastport, Me., to Pensacola, Fla., including the Great Lakes that one would be excluded from in a boat of this size.

Advancing into the larger types of boats we have the 90 foot twin screw motor yacht, especially able, so designed and constructed to withstand rather severe weather and in such a boat it is possible to obtain from three to four

staterooms giving sleeping accommodations for a party of six to eight people. The dining saloon is usually located forward in a deck house, which is slightly sunken below the main deck level with the galley and crew quar-ters forward and the engine room located approximately This size craft genamidships. erally is run with a captain, encombination cook-steward and one or two sailors. the present market such a boat in good sound condition ot comparatively recent build can be somewheres between had for \$35,000 and \$50,000.

In boats of larger size particularly in the class between 100 and 115 foot in length we find especially desirabe living quarters with all the comforts and conveniences of the modern apartment or summer home, such as a fine big deck dining saloon, a drawing and music room, as well as a great amount of deck space which is usually fitted up in a most attractive manner. A yacht of this type

usually contains from four to six staterooms with from two to three bathrooms and carries a crew of from six to nine men. These yachts are generally offered at a price ranging from \$50,000 to \$70,000. The majority of these boats are all gasoline powered, although in several instances it is possible to obtain the Diesel powered craft.

In the houseboat line, which is becoming the popular type of boat due to the commodious and airy quarters which it is possible to obtain in this type of craft, owing to their extreme beam and the fact that larger windows instead of port lights are used, we find somewhat of a standardized design. Take the average 50 foot (Continued on page 300)

#### Approximate Values of Used Boats

The following table gives a fair idea of the amount which average cruisers and motor houseboats in A-1 condition, fully found, and powered with engines of standard make and horse-power should bring in the 1925 market:

Lei	ngth								Value
	Feet								
40	Feet								6,000
50	Feet								11,000
60	Feet								17,000
70	Feet								25,000
	Feet								35,000
	Feet								47,000
100	Feet								58,000
110	Feet								70,000

3 TWIN ELECTION EVI

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Safe Rudder Steering

> Starts with a Touch

New Propello Pump

See the Elto at the National Motor Boat Show, Block C, Grand Central Polace, New York City, January 2 to 10, 1925

Most Portable of All Motors for its Power



## for MEN of Courage and Action

#### Capt. Donald MacMillan-

whose Arctic exploits have thrilled the world, sailed with his party from Wiscasset, Maine, in June, 1923, on the schooner "Bowdoin," bound for the Arctic Regions. They returned in August, 1924. Capt. MacMillan writes, "It is a real pleasure for me to express my appreciation of the work done by the Elto Outboard Motor during my recent North Greenland expedition. Its reliability and astounding performance in the face of extreme conditions, such as we encountered, have knocked completely out of my mind all doubts as to its real usefulness."

#### Lewis R. Freeman-

caught in a terrific gale while crossing the Northern end of Lake Michigan on his Lakes-to-Ocean trip says, "Water washed over me again and again and I was forced to bale for my life, but the Elto was wonderful—it never missed a stroke. Had it given out, there would have been not one chance in ten of reaching land before swamping." On this strenuous 2000-mile trip, not a single motor replacement was necessary. Upon the return of the motor to the factory for examination, not even the slightest wear was noticeable.

#### Linden B. Pentz-

well-known newspaper man of Anacortes, Wash., whose thousand-mile Seattle-to-Alaska cruise in a 16 ft. boat carried him much of the time in the open sea, says that "At Ripple's Point the waves came at us like a pack of hungry wolves until we were almost bewildered and couldn't tell which way to turn, but there was nothing to do but to head right into the sea and to hope that the Motor wouldn't stop. Believe me, that plucky little engine didn't miss a beat and when I think that all that stood between us and practically certain death was a little Elto engine driving a boat far too heavy for it, I think considerable praise is due that engine."

Such demands have never before been made of any Outboard Motor. Not only was Elto honored in being selected by these hardy explorers, but its remarkable performance proved beyond question that for Power, Speed, Stamina, Dependability, and Safety, Elto stands alone in the field.





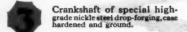
Made Only by FITO OTITROARD MOTOR Co Milwaukee

The Fastest

#### LIGHT TW

Offset cylinders with straight con-Offset cylinders with straight con-necting rods prevent side thrust caused by offset connecting rods which distorts bore, destroys compression, de-creases power and compels cylinder re-boring or replacement.

Piston rings wide enough to span cylinder ports—a guarantee against ring wear and breakage.



Long main bearings. Lower Crank Shaft bearing 3½ x 15-16 in. diameter. Upper bearings 3 in. x ½ in. diameter. Crank pins 11-8 in. long x 7-8 in. diameter. Drive and propeller shafts special high-grade nickle steel, 5-8 in. diameter case hardened and ground.

Crank Case and main lower housing each a single casting, doing away with innumerable joints, and troublesome packing. A vibration-proof structure.

Full floating type drive and propeller shafts, case hard-ened. Twist-proof main aluminum housing takes all shocks when strik-ing under-water obstacles, and pre-ents any damage to drive shaft and other working parts.

Adjustable renewable bronze bushed bearings. Twenty-three square inches of bearing sur-face. More than double the bearing area of any other light-weight Motor.

Rudder folds and locks for carrying, giving motor di-mensions 9 1/x13 3/4 x36 in. Balances perfectly for easy handling.

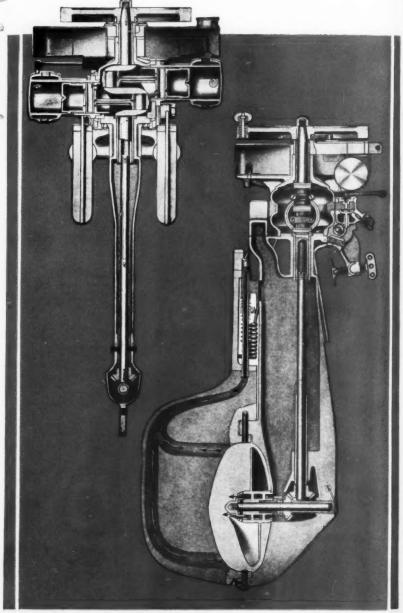
The Propello Pump — Ole Evinrude's new invention — scoops, forces and syphons the water continuously. Yet there is not a single moving part in the Pump. No valves to stick, no wear. Clogging, overheating and damage are impossible. Positive cooling in all waters, at all speeds. Automatically drained, no freezing of cylinders or piping. An exclusive Elto feature.

Under water exhaust entirely eliminates noise, exhaust odors and oil dripping.

#### Write for Free Catalog

Fully describing the ELTO Fast Light Twin, designed by Ole Evinrude, and

Built Only by



ELTO OUTBOARD MOTOR CO. Dept. F. Manufacturers' Home Bld MILWAUKEE, WISCONSIN

OLE EVINRUDE, President

# NAVAL ARCHITECTS GIELOW YACHT BROKERS

NAVAL ARCHITECTS ENGINEERS YACHT BROKERS MARINE INSURANCE

# HENRY J. GIELOW, Inc.

25 West 43rd STREET, NEW YORK

Tel.: Murray Hill 9134 Cable Address: Crogie, New York A.B.C. Code

Plans and specifications for new yachts of any size or type should be prepared now to assure delivery for next year. Have plans of new yachts, all types, on file now.

We have a most complete and up-to-date list of steam and motor yachts of all sizes, sail, auxiliary, and houseboats, on file in our office, kept constantly up-to-date, by therough and comprehensive canvass of the entire yachting field from time to time. We are in a position to submit full information on any type of boat upon request.



No. 8116-For Sale-L. O. A.-112 Ft.-Beam-22 Ft.

Most attractive cruising houseboat available at this time.

Seven large comfortable staterooms, two baths, big dining saloon, also music room on deck, fine crew's quarters, large roomy after deck. Cabins all well appointed with finest of equipment, completely furnished in commission with crew aboard ready for immediate delivery.

For full particulars, inspection and trial run.

Apply to-Henry J. Gielow, Inc., 25 West 43rd Street, N. Y. C.



No. 7056—For Sale—Charter—Attractive cruiser with house-boat accommodations having three double staterooms, large deck house and lower saloon. Accommodate 6-9. Two 20th Century motors. Speed 10-11 miles. Bath, two toilets in owner's quarters. Dimensions are 88' x 16' x 3' 6". Hot water heat, electric plant. Completely equipped for cruising. Economical to run with crew of five men. Reasonable price. Henry J. Gielow, Inc., 25 West 43d St., New York City.



No. 8310—For Sale—Most desirable cruising houseboat, giving exceptional accommodations. 45' x 13' x 3'. Built best manner in 1921. Actual speed 9 miles. Double and single stateroom, saloon and deck saloon. Sleeps six. Crew staterooms forward. Delco plant, completely equipped. Near New York. Henry J. Gielow, Inc., 25 West 43d St., New York City.



No. 8375—Sale or Charter—Now at Miami. Desirable brand new cruising houseboat, 55' x 15' 5'' x 3', heavy construction, good finish. 60 H.P. heavy duty motor, deck controls, electric plant. Double, two single rooms, bath, saloon below and on deck. Economical with two crew. Complete. Henry J. Gielow, Inc., 25 W. 43d Street.



No. 8394—For Sale or Charter—Most attractive 70 ft. twin screw houseboat. Accommodations consist of 3 staterooms, two toilets and bath, also saloon below. Large deck house which can be used as dining saloon or living room. Sterling motors, speed 11-12 miles. Hot water heat, all conveniences. Henry J. Gielow, Inc., 25 West 43d Street, New York City.

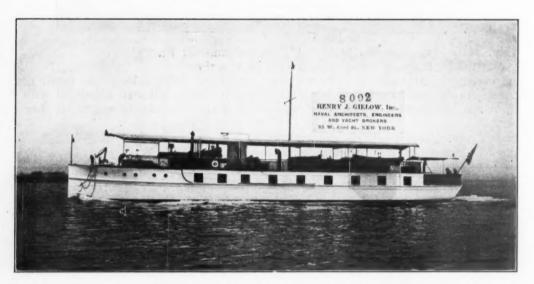
#### NAVAL ARCHITECTS YACHT BROKERS

FOR SALE OR CHARTER

No. 8092

Most unusual offering is this attractive twin screw houseyacht.

Length Over All - 90 feet 0 inches 17 feet 6 inches Draft 4 feet 0 inches



Powered with two 6 cylinder 125 H.P. Winton Gasoline Engines, Winton Generating Set, Edison Storage Batteries, all new in Fall of 1923, at which time the yacht was thoroughly overhauled, piping, wiring, tanks, etc., renewed.

Spring 1924 interior was all redecorated and refinished.

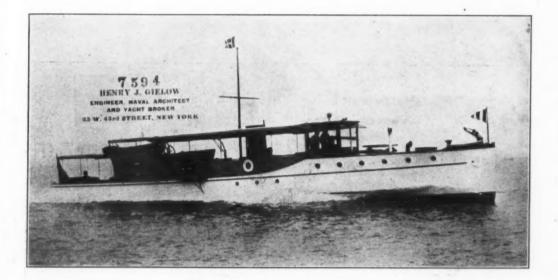
Three large staterooms in the owners' quarters provide sleeping accommodations for six to ten people. Two baths, fine big dining saloon.

THIS CRAFT HAS CRUISED THE ENTIRE ATLANTIC COAST, INCLUDING BAHAMA ISLANDS AND CUBA. UNUSUALLY ABLE SEABOAT.

Owner will entertain reasonable bid on sale or will consider chartering. YACHT NOW IN COMMISSION IN FLORIDA WHERE DELIVERY WILL BE MADE.

Fuli particulars through Henry J. Gielow, Inc., 25 West 43rd St., New York. Murray Hill 9134.

### NAVAL ARCHITECTS GIELOW YACHT BROKERS



No. 7594—For Sale—A wonderful opportunity to obtain a beautiful 80-foot twin screw motor yacht, embodying excellent cruising accommodations with a fine turn of speed.

One of the famous "Consolidated" built craft, powered with a pair of Speedway motors giving a speed up to 20 miles per hour.

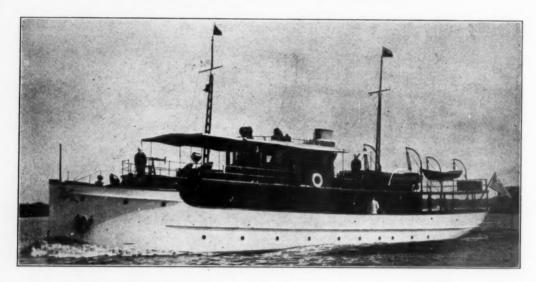
Comfortable sleeping accommodations are furnished in two staterooms, saloon and dining room, finished in Mahogany.

Provided with an unusual amount of deck space and a large cockpit.

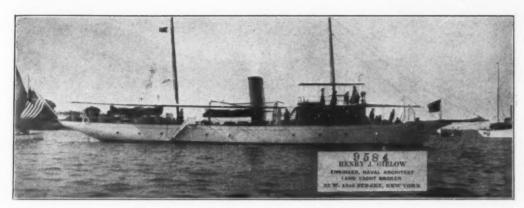
Very economical to operate, can be run with small crew, located in New York — Price attractive. Must really be seen to be appreciated. Entire outfit in first-class shape. HENRY J. GIELOW, INC., 25 West 43rd Street, New York City. Murray Hill — 9134.

# NAVAL ARCHITECTS GIELAN YACHT BROKERS

#### AN EXCEPTIONAL OPPORTUNITY IN A DIESEL YACHT



#### NAVAL ARCHITECTS YACHT BROKERS



No. 9584-FOR SALE-Attractive, well built, trim lined, Steam Yacht.

Length Beam Draft

Built by Lawley, always well taken care of and in finest possible condition at this time.

Owner's quarters are located aft and contain three large staterooms, bathroom, extra toilet, and large saloon or drawing room extending the full width of the yacht. These quarters are beautifully decorated and finished in Mahogany and White.

Of the flush deck type with an unusual amount of clear deck space. Dining saloon in the deck house forward. Wonderful bridge and sun deck.

Boilers and engines in fine shape. Can be operated with a crew of eight men.

"PRICE VERY LOW FOR QUICK SALE."

Full details through—HENRY J. GIELOW, INC., 25 WEST 43rd STREET, NEW YORK CITY—MURRAY HILL-9134.

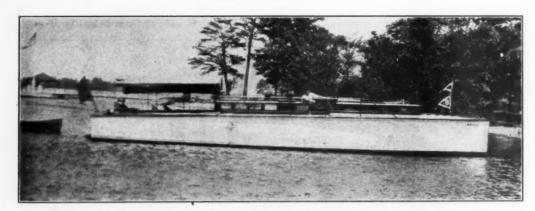


No. 7729—FOR SALE—A trim little craft, heavily constructed, sound and seaworthy with a fair turn of speed is this 60 foot twin screw Express Cruiser.

Built in 1916 thoroughly overhauled quite recently she is now being offered at a remarkably low figure.
Has double stateroom and main cabin sleeping four very comfortably, good sized galley, excellent quarters for crew. Powered with a pair of high speed motors cruises along around eighteen miles an hour.
Here is a craft worth looking at before you decide on any boat. Located here in New York.

HENRY J. GIELOW, INC., 25 WEST 43rd STREET, NEW YORK CITY—MURRAY HILL-9134.

# NAVAL ARCHITECTS GIELOW YACHT BROKERS



No. 7796-FOR SALE-A wonderful chance to buy one of the finest small high speed express cruisers at a remarkably low figure.

Forty-five feet in length, built in 1918, remodeled in 1921. Built of oak frames, cedar planked, copper fastened this remarkable craft is the best purchase on the market.

A reliable high speed motor drives this round bilge hull through the water at from twenty-five to thirty miles per hour. Entire hull, engine and equipment in first class shape—located in New York for inspection.

"ACT QUICK", HENRY J. GIELOW, INC .- 25 WEST 43RD STREET, NEW YORK CITY-MURRAY HILL-9134.



Completely
Overhauled
and Refinished

# COMMUTING OR CRUISING SPEEDING OR LOAFING

IDEAL FOR
Florida Fishing
Canadian Cruising
Coast Commuting

No. 7940-The owner of this twin-screw Express Cruiser is building a larger boat, and so offers his present boat at a reasonable price.

All exterior paint and varnish removed to bare wood and newly repainted and revarnished. Motors thoroughly gone over and are in first class shape.

Boat has always had exceptional care, was built for present owner, has been left in private boat house, used in fresh water and is in as good condition as a new boat.

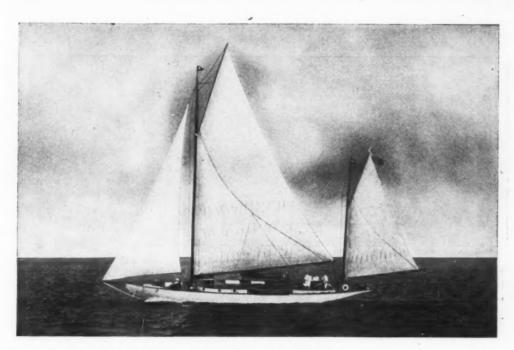
Length 54 ft.

Speed 5 to 25 M. P. H.

Two 6 Cyl. Sterling Engines

HENRY J. GIELOW, INC., 25 WEST 43RD STREET, NEW YORK CITY-MURRAY-HILL-9134.

## ARCHIT



No. 9108...For Sale-One of the handsomest 60 foot Auxiliary Yawls afloat today.

Heavily constructed, built under personal supervision of owner, a lumber man and experienced yachtsman. Trunk cabin and cockpit type with most unusual accommodations.

cockpit type with most unusual accommodations.

Built new 1916—Heavy duty Sterling Engine new 1917—Independent lighting plant, Exide batteries, full inventory includition on sits of sails in first class condition, one new 1923. Luxuriously furnished.

Owner who is responsible business man guarantees boat in first class condition or No Sale. Detailed inspection invited. Price most reasonable.

Further information through Henry J. Gielow, Inc., 25 West 43rd Street, New York City. Murray Hill—9134.



No. 7578.—For Sale—One of the most attractive moderate sized twin screw Express Cruiser offered at this time.

Length 66 feet, Beam 12 feet, Draft 3 feet 6 inches.

Built by Nock in 1918, rugged construction, planked with white cedar, copper fastened.

Has large double stateroom, sleeps four to six comfortably. Cabin beautifully finished in white enamel and mahogany, furnished in excellent taste.

Two Sterling motors which have been thoroughly overhauled and are in excellent shape drive her up to 24 miles per hour. Now on way South, can be delivered in Florida, for this season's use—Price attractive.

Further details on application to—
Henry J. Gielow, Inc., 25 West 43rd Street, New York City. Murray Hill—9134.

#### YACHT BROKERS NAVAL ARCHITECTS G



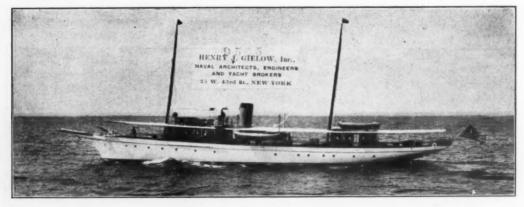
A9297—FOR SALE—Unusually attractive 57 ft. bridge deck cruiser. Heavily constructed, built new in 1920. Powered with six cylinder Sterling motor. Speed ten to twelve knots.

Has fine big double stateroom. Total sleeping accommodations for four. Finished below in white enamel with mahogany trim.

trim.

This craft is exceptionally good sea boat—has been kept right up in fine shape and is offered at a price considerably under duplication price. Completely fitted and furnished. Recommend inspection be made in order to appreciate boat.

For further particulars HENRY J. GIELOW, INC., 25 West 43rd St., New York City, N. Y. Murray Hill 9134.



FOR - SALE - PRICE - LOW

No. 9565 - Well appearing, roomy and comfortable off shore Steam yacht-Length 131 ft. Beam 17 ft. Draft 6 ft. 6 in. Six large staterooms in owner's quarters, two baths, deck dining saloon, deck lounging room. Interior finish throughout in beautiful hardwoods.

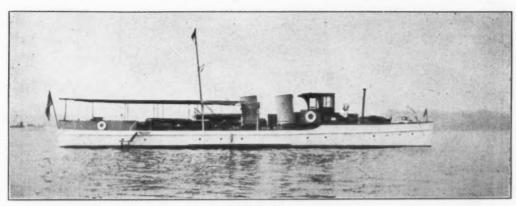
Owner's quarters handsomely fitted and furnished with unusual equipment.

Triple expansion Seabury Engine, Seabury boiler, entire plant in excellent condition.

Owner anxious to sell as he has larger yacht, now in New York. Further data and inspection through HENRY J.

GIELOW, INC., 25 West 43rd Street, New York City. Murray Hill 9134.

### NAVAL ARCHITECTS G



#### FLI-HAWK

NO. 7807—FOR SALE—Opportunity to secure this fine looking, able power yacht at most attractive price.

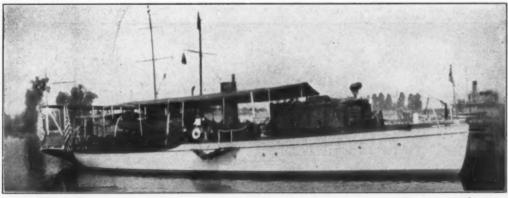
Length over all 81 ft., beam 12 ft., draft 4 ft., powered with heavy duty air starting motor giving speed twelve to fourteen miles per hour. Has new independent generator for electric lights, Exide batteries.

Three staterooms in owner's quarters, large main saloon, fine dining saloon. Interior finish of white enamel with Mahogany trim. Total sleeping accommodations for six, completely equipped.

Fall of 1924—Entire boat, and machinery thoroughly overhauled at considerable expense. Owner might consider small express cruiser in trade. Now on way South; available for delivery in Florida.

Full details can be had, and inspection arranged through Henry J. Gielow, Inc., 25 West 43rd Street, New York City.

Murray Hill-9134.



NO. 7089—FOR SALE—One of the best built, most attractive trunk cabin cruisers available at this time. Length 78 ft., beam 14 ft., draft 4 ft.

Three staterooms finished in beautiful mahogany panels, are located aft for the owner with two toilets and washrooms.

Dining saloon is located in deck house forward with galley below decks. Crew's quarters in bow.

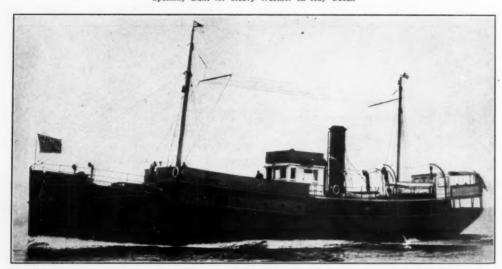
Two four cylinder 40 H.P. Standard motors drive this craft at a speed of 11 miles an hour.

Main engines thoroughly overhauled in 1923. New electric generator installed in 1923—new launch 1923—new awnings 1924. Entire boat, machinery and equipment in first class shape. OWNER NOW BUILDING A LARGER BOAT. PRICE REASONABLE.

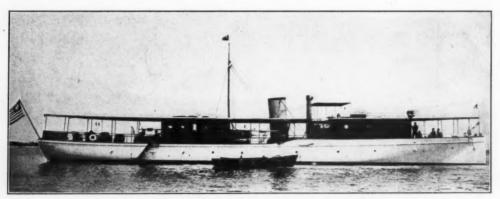
Full details and inspection arranged through Henry J. Gielow, Inc., 25 West 43rd St., N. Y. C., Murray Hill 9134.

# NAVAL ARCHITECTS GIELOW YACHT BROKERS

Specially Built for Heavy Weather on Any Ocean



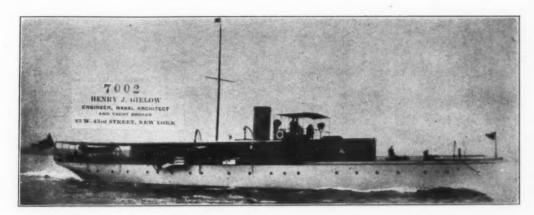
No. 9276—FOR SALE—Steel Steam Screw Yacht Extra Strongly Constructed with A-1 Lloyds Rating—143 feet overall, 135 ft. 6 in. w.l., beam 22 ft. 6 in., draft 13 ft. Cruising Speed 10 miles, steaming radius 3200 miles. Ten state-rooms accommodating 14 in Owner's Quarters, two baths and four Toilets, Social Hall, Dining Saloon seating 14, electric lighted and steam heated with extra large provision and cold storage—Wireless Room, motor tender, metal life boat, two row boats and full inventory. A Real Ocean going vessel at an attractive price. Apply to HENRY J. GIELOW, INC., 25 West 43rd St., New York City, Murray Hill 9134.



112-Foot Lawley-Built Cruiser, with Two 220 H.P. Standard Engines

No. 7012—FOR SALE—Especially desirable, able, fast twin-screw cruising power yacht; 112 ft. overall, 15.6 ft. beam, 5 ft. 8 in. draft. Lawley-built; speed up to 16 miles; two 220 H. P. 6 cyl. air starting and reversible Standard gasoline motors (used one season). Fitted with all conveniences including Winton Independent generating set (new 1922); hot water heating plant, etc. Deckhouse and deck trim of teakwood. Accommodations exceptionally large, consisting of deck dining saloon forward, social hall in after deckhouse; two double, three single staterooms, bath and two toilets below aft. Sleeping accommodations for eleven besides crew. Interior, mahogany and white enamel. Very best construction. Unusually complete equipment, including motor tender and dinghy. Attractive opportunity to secure exceptional value as owner has acquired larger vessel. For plans, further particulars and inspection, apply to HENRY J. GIELOW, INC., 25 West 43rd St., New York City, Murray Hill 9134.

#### NAVAL ARCHITECTS YACHT BROKERS



No. 7002-FOR SALE-BY ESTATE-One of the few large offshore yachts available this time.

Length	138' 4"
Beam	17' 2"
Draft	6' 0"
Speed	13 knots

Built of steel, heavily constructed, splendid seaboat, hull, engines and equipment in FINEST POSSIBLE CONDITION.
Four large staterooms in owners' quarters, finished in Colonial style, all furniture Mahogany. Two baths in owner's

There are two large deck houses, dining saloon in forward one; while after house which is finished in Empire style in African Mahogany is used as social hall.

Fully equipped with finest inventory—ESTATE IS DESIROUS OF SETTLING ITS AFFAIRS AND REASONABLE PRICE WILL BE CONSIDERED. HENRY J. GIELOW. INC., 25 WEST 43RD STREET, NEW YORK CITY, MURRAY HILL-9134.



No. 7841—FOR SALE—This wonderfully able, fast, twin screw motor yacht for offshore or fast ferry service. 127' 6" x 17' 6" x 6', built wood, extra heavy, 1919 to Government specifications but never in war service. Is exempt from user's tax. Two 6 cyl. 220 H.P. Standard motors set tandem on each shaft, speed 18 to 23 miles, 4,000 gallons gasolene installed for safe cruising radius 2,000 miles, 900 gallons water. Two electric plants, 5 W. T. builkheads. Three double staterooms, lounge saloon, deck dining saloon. Large galley and forecastle, two baths, good deck space. Sleeps 7-9 and eight crew. Yacht in commission Summer 1924. Heated throughout. Clothel ice machine. Complete, first-class condition.—HENRY J. GIELOW, INC., 25 WEST 43RD STREET, NEW YORK CITY.

### NAVAL ARCHITECTS GIELOW YACHT BROKERS

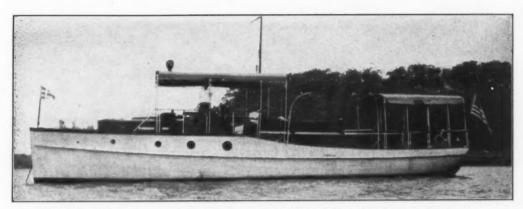


No. 8375.—For Sale or Charter—Now at Miami, Florida, with exceptionally competent two-man crew. Attractive brand new Northern built houseboat, 55 x 15 x 3, 60 H.P. high grade heavy duty motor gives cruising speed nine miles. Has double and two single staterooms, dining and deck saloons, bath, two owner's toilets. Sleeps 5-7. Excellent galley and crew quarters. Large after deck. Fully equipped, all first class. Draught suitable cruising all Florida waters. Henry J. Gielow, Inc., 25 W. 43d St., N. Y. City.



No. 7584.—For Sale—Price reasonable. Desirable' seagoing twin screw motor yacht. 100' x 17' x 5', heavy built. Has cruised Florida outside and in Canadian waters. Thoroughly overhauled 1922-1923, entirely refurnished on deck and below. Two 6 cylinder 20th Century motors 1923, new lighting plant and batteries. Speed 12-15 miles. Large deck space, new mahogany decks. Aft are three single staterooms and bath, forward one double, two single rooms and bath making splendid two family boat equal to houseboat accommodations. Galley and dining saloon on deck. Completely equipped. Owner going abroad so cannot use. Sleeps 9-11 besides crew 6. Henry J. Gielow, Inc., 25 W. 43d St., N. Y. City.

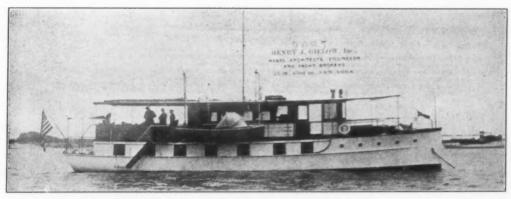
#### WAVAL ARCHITECTS (1) YACHT BROKERS



No. 7331—FOR SALE—50 foot heavily constructed raised deck cruiser. Built specially for Bermuda races, Has large double stateroom for owner, fine big cabin, two toilets, interior finished in mahogany. Powered with a heavy duty reliable motor, speed ten miles, excellent scaboat. A decidedly good purchase and really must be seen to be appreciated. Price is reasonable, and inspection can be arranged through HENRY J. GIELOW, INC., 25 West 43rd Street., New York City. Murray Hill—9134.

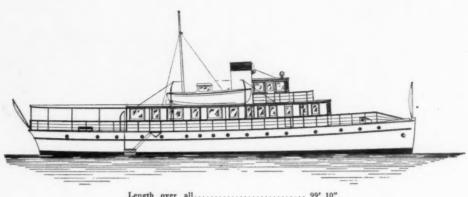
#### NOW IN FLORIDA

#### DELIVERY IMMEDIATELY



#### NAVAL ARCHITECTS YACHT BROKERS

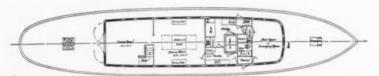
A POPULAR SIZED DIESEL MOTOR YACHT



Length over all.
Length on load water line
Beam
Draft

GIELOW designed GIELOW supervision of construction.

A staunchly built steel twin screw Diesel Motor Yacht, having exceptionally fine seagoing qualities, large fuel oil and fresh water capacity, giving cruising radius seldom obtained in this size craft.



Equipment specified most modern in every way and includes such conveniences as refrigerating and ice making plant, electric windlass, house flush type plumbing etc.

Owner's quarters are provided with six staterooms with separate beds for eight persons; four baths all connecting with staterooms.

Continuous deck house provides large smoking and card room forward, toilet and shower so that smoking room can be used as a stateroom in emergency, galley and pantry, dining saloon 15' x 13'6" living room 14' x 13'

Delivery in time for 1925 seasons yachting.



Prompt action is necessary in placing your order to insure early delivery.

Further details can be obtained through—HENRY J. GIELOW, INC., 25 WEST 43rd STREET, NEW YORK CITY—MURRAY HILL—9134.

5

## NAVAL ARCHITECTS GIELAN YACHT BROKERS



No. 9524—FOR SALE—The 165 foot steel oil burning steam yacht pictured here was built by Lawley, powered with two triple expansion engines with Norman type boilers and has a speed up to twenty miles per hour. In the owners' quarters aft there are six roomy comfortable staterooms with four bathrooms. There are two deck houses containing the dining saloon in the forward one and social hall in the after one.

Built of especially high grade steel with all joiner work of selected hard woods, plumbing of most modern type with running hot and cold fresh and salt water.

Large cruising radius, entire outfit completely overhauled, offered subject to inspection through—HENRY J. GIELOW, INC. 25 WEST 43RD STREET. NEW YORK CITY. MURRAY HILL—9134.



No. 7034—FOR SALE—Gielow designed 90 foot twin screw offshore power yacht.

Built new 1917, never in government service, powered with a pair of Winton motors which gives her a speed of twelve knots per hour.

Three large staterooms and bath and extra toilet room are arranged for in the owners quarters aft, while the crews quarters forward are commodious.

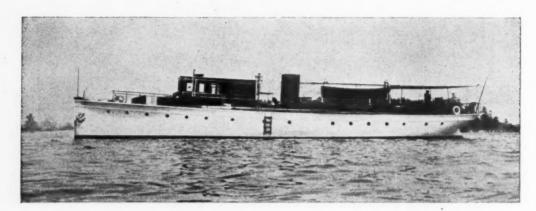
This fine little craft is heavily constructed has had best of care and attention now located in New York for inspection.

Inventory unusually complete—further information through HENRY J. GIELOW, INC. 25 WEST 43RD STREET. NEW YORK CITY. MURRAY HILL—9134.



No. 9551—FOR SALE—Magnificent Lawley built 150 foot steel steam yacht.
Six large staterooms are in the owners quarters with two baths and three toilets. Cabins below are finished in white enamel and mahogany.
Deck house is of teak outside and contains the dining saloon forward finished in beautiful Old English Oak 16 feet long; main saloon finished in Old English Oak in after end of deck house.
Triple expansion Lawley engine with Almy boilers gives cruising speed of 11 knots.
Entire outfit completely overhauled, in excellent condition and is offered at most reasonable price. Full details through—HENRY J. GIELOW, 1NC. 25 WEST 43RD STREET. NEW YORK CITY. MURRAY HILL—9134.

#### NAVAL ARCHITECTS GIEIR BROKERS





No. 7149—One of the finest 62 foot Motor Yacht available.

Built of the best of materials, now in excellent shape this remarkable craft is an exceptionally comfortable and roomy boat and can be purchased most reasonably.

Has large double stateroom with bath, fine big saloon giving accommodations for two extra people, large roomy deck dining saloon.

An excellent seaboat, new power plant in 1924, located in New York for inspection.

Just the craft you have been looking for, write—wire—or phone for further particulars.

HENRY J. GIELOW, INC. 25 WEST 43RD STREET. NEW YORK CITY.

Telephone

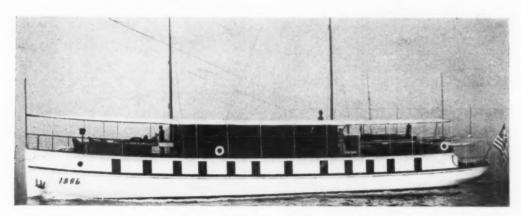
4510 John

# TAMS & KING FORMERLY TAMS, LEMOINE & CRANE

NAVAL ARCHITECTS YACHT BROKERS

52 Pine Street New York City

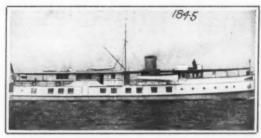
OFFER ALL OF THE DESIRABLE YACHTS AVAILABLE FOR SALE AND CHARTER, SOME OF WHICH ARE ILLUSTRATED BELOW



No. 1886-For Sale or Charter-This desirable 100' twin screw houseboat. The accommodations include six staterooms, 3 baths, dining saloon and deck saloon. Furnishings and equipment of the best. Winton motors give speed of 9 knots.



No. 1902—For Sale or Charter—64' houseboat in Florida aters. Three staterooms, bathroom and dining saloon.



No. 1845—For Charter—In commission in Florida waters. Modern triple screw houseboat. 120' 9" x 21' x 3' draft. Designed by Tams & King and built in 1920. Three Meitz & Weiss oil engines. Six staterooms, four bathrooms, dining saloon, deck sitting room, etc.



No. 1912—Sale—Charter—Attractive 77' houseboat; 2-50 H.P. tandard motors; speed 11 miles; 4 staterooms, dining saloon, Standard motors; speed 1 deck saloon and 2 bathro



No. 8102—For Sale—Attractive cruiser 81' x 13' x 5'. Standard motor speed 15 miles. Two double staterooms, large dining saloon, completely equipped and in first class condition in every department.

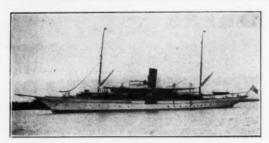
Cable Address: BROKERAGE, NEW YORK

# COX & STEVENS

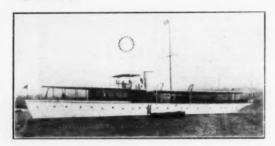
WHITEHALL, 2700 Telephone:

NAVAL ARCHITECTS---MARINE INSURANCE---YACHT BROKERS
25 BROADWAY, CUNARD BUILDING (Morris Street Entrance), NEW YORK

On this page are shown a few representative yachts selected from our large lists. Should none appeal kindly acquaint us with your requirements. Full information regarding costs to build, purchase or charter yachts of all types gladly furnished.



No. 341—For Sale or Charter—Large, sea-going steam yacht. Palatial accommodation. Unusual opportunity. Several similar larger and smaller available craft. Cox & Stevens, 25 Broadway, New York.



No. 1466—Offered by Estate—Particularly attractive, 138 ft. steel twin-screw cruising power yacht. Speed up to 17 miles; two 300 H.P. motors. Beautifully finished and furnished. Large dining saloon in forward deckhouse; social hall or music room in after deckhouse; three double and one single staterooms and two bathrooms aft. Cox & Stevens, 25 Broadway, New York.



No. 4235—SACRIFICE—110 ft. Subchaser, converted to roomy motor yacht, at considerable cost. Powered with two 220 H. P., air-starting reversible Standard Motors. One of the best of the fleet. Splendid accommodations. Submit any offer. For plans, etc. apply to COX & STEVENS, 25 Broadway, New York.



No. 3944—For Sale—Twin-screw cruiser; 60 ft. x 12 ft. x 3 ft. 7 in. draft. New 1920. Speed up to 14 miles; two 50 H.P. Sterling motors. Stateroom, saloon, bath and toilet, galley, etc. Price attractive. Cox & Stevens, 25 Broadway, New York.

No. 2830—For Sale—Attractive 50 ft. bridge deck cruiser in excellent condition. Two cabius, large afterdeck. Equipped with 50 H.P. heavy duty motor. Speed with 50 H.P. heavy duty motor. Speed 11 miles. In commission. Cox & Stevens, 25 Broadway, New York.



No. 885—FOR SALE—Fast, steel, twin screw, cruising power yacht, approximately 120 ft. in length. Speed up to 16-17 miles; Winton Motors. Unusually large accommodation, including deck dining saloon, three staterooms, bath and two toilets. Handsomely finished and furnished. COX & STEVENS, 25 Broadway, New York.



No. 3489—FOR SALE—Particularly attractive 90 ft. twin crew, cruising motor yacht. Built 1917. Speed 13-14 miles; Vinton Motors. Deck dining saloon, three staterooms, bath and two toilets. STEVENS, 25 Broadway, New York.



No. 4346—FOR SALE OR CHARTER—Especially attractive, twin screw, Diesel motor yacht; 86 ft. in length. Built 1922. Speed 12-13 miles. Deck dining saloon, toilet room and separate galley forward. Two double staterooms and vestibule with double transom. Bath and two toilets aft. Handsomely finished. All conveniences. Extremely economical to operate. COX & STEVENS, 25 Broadway, New York.



No. 3925—FOR SALE—High speed 52 ft. Twin Screw cruiser. Speed up to 25 miles; two 200 horsepower Speedway motors. Deck dining saloon, double stateroom, toilet room, galley, etc. Cox & Stevens, 25 Broadway, New York.

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# COX & STEVENS

Telephone: WHITEHALL, 2700

NAVAL ARCHITECTS---MARINE INSURANCE---YACHT BROKERS
25 BROADWAY, CUNARD BUILDING (Morris Street Entrance), NEW YORK

Our direct representative in Florida, prepared to give clients careful personal attention, can be reached promptly through us. A few of the available craft in Florida are shown here. What are your requirements?



No. 3989—FOR SALE OR CHARTER—Modern, twin screw, motor houseboat; 96 x 21 x 3.9 ft. Built 1920. Speed 11 miles. Commodious accommodation includes extremely large combined living room and dining saloon on deck; five staterooms and four bath rooms. Fitted with all conveniences; handsomely finished and furnished. COX & STEVENS, 25 BROADWAY, NEW YORK.



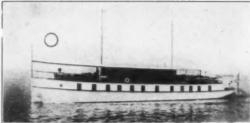
No. 4400—FOR SALE OR CHARTER—Practically new, 68 ft. motor houseboat. New 1923. Speed 10 miles. Accommodation includes deck dining saloon, three staterooms and two bath rooms. An exceptionally comfortable cruiser, and excellent sea boat. COX & STEVENS, 25 BROADWAY, NEW YORK.



No. 4421—FOR SALE—Modern, twin screw, Diesel motor yacht; 98 x 17 x 5 ft. Built 1922. Construction extra heavy. Speed 10 to 11 miles. Fitted with all conveniences, including toe machine, etc. All owner's and guests' quarters on deck, including saloon, two double staterooms and two bathrooms. Extremely economical to operate and has proven remarkably able. Now in commission. Only offered as owner is building larger Diesel yacht similar type. For further particulars apply to COX & STEVENS, 25 BROADWAY, NEW YORK.



No. 883—FOR SALE AT BARGAIN OR CHANTER—Able, twin-screw 95-foot motor yacht. Speed 12-13 miles; two 6-cylinder, 125 H.P. Winton motors, new 1920. Dining saloon in deckhouse forward; below two double staterooms, main saloon, two bath and toilet rooms, etc. Further particulars from Cox & Stevens, 25 Broadway, New York.



No. 3000—FOR SALE OR CHARTER—Commodious twin screw, motor househoat; 100 x 18 x 3.6 ft. Speed 10-11 miles; Winton Motors. Splendid accommodation includes dining saloon and lounge room on deck; six staterooms (including five double) and three bath rooms below forward. All conveniences. COX & STEVENS, 25 BROADWAY, NEW YORK.



No. 3151—For Sale or Charter—Particularly desirable twinscrew houseboat; 77 x 17.6 x 3 ft. Speed 11 miles; two 6 cylinder 60-70 H.P. Standard Motors new 1919. Large decknouse containing social hall; main saloon, two double and two single staterooms, two baths and toilet rooms, etc. Handsomely finished and furnished. Cox & Stevens, 25 Broadway, New York.



No. 4363—For Charter—Twin screw motor houseboat, 85' x 18' x 3.3' Winton motors. Four staterooms, two baths and three toilets. Deckhouse 25' long, containing combined dining saloon and living room. Luxuriously fitted and turnished. All conveniences. Cox & Stevens, 25 Broadway, New York.



No. 2630—For Sale or Charter—Now in Florida, in commission—Especially attractive, fast, roomy, twin screw, cruising motor yacht; 31 ft. 6 in. overall, 14 ft. 6 in. beam, 3 ft. 6 in. draft. Speed 17-18 miles, exterior joiner work of mahogany throughout. Dining saloon in forward deckhouse; aft are two double and one single stateroom, bathroom and additional toilet room. COX & STEVENS, 25 BROADWAY, NEW YORK.

Telephones
Vanderbilt  $\begin{cases} 0596 \\ 8415 \end{cases}$ 

## RIGG'S YACHT AGENCY

350 Madison Ave. (at 45th St.) NEW YORK

Cable Address "Rigging"



FOR SALE—No. 933. Express Cruiser. Dimensions 60' x 11' x 3'. Built by the Consolidated Company in 1920. Luxurious owner's quarters. Double stateroom, bathroom, 2 toilets. Speedway Motors. Speed 25 m.p.h. All controls at wheel. Fine sea boat. Apply RIGG'S YACHT AGENCY, 350 Madison Ave. (near 45th St.), New York City.



No. 1257—Raised deck Cruiser. 36' x 9' x 3'6". Frisbie Motor. Fine double stateroom and large saloon. Equipment most complete, including dinghy, crockery, cooking utensils, etc. Very highly recommended. Apply RIGG'S YACHT AGENCY, 350 Madison Avenue, New York, N. Y.



No. 959—Bargain for quick sale. Houseboat. In Florida. Dimensions 85'x 18'x 2'6" draft. Standard Motor. Has one single and three double staterooms. Excellent condition. Immediately available. Apply RIGG'S YACHT AGENCY. 350 Madison Avenue, New York, N. Y.



No. 783—Express Cruiser. Speed 25 m.p.h. Sterling Motor, 150 H.P., new 1922, fitted with electric starter. Fine accommodations for four people. Large galley. Ice box holds 200 lbs. Roomy cockpit. Apply RIGG'S YACHT AGENCY, 350 Madison Avenue, New York, N. Y.



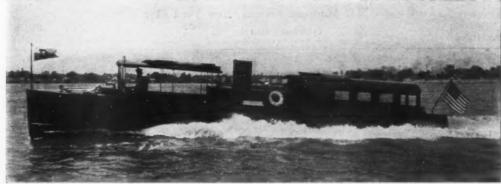
No. 1185—Roomy power cruiser. Twin Screw. Standard Motors. Dimensions, 68' x 13' x 3'10" draft. Copper tanks. Homelite lighting plant. One double and two single stateromes. Four toilets. All in perfect condition. Good sea boat and ideal for either Northern or Southern cruising. Apply RIGG'S YACHT AGENCY, 350 Madison Avenue, New York. N. Y.

Telephones
Vanderbilt  $\begin{cases} 0596 \\ 8415 \end{cases}$ 

# RIGG'S YACHT AGENCY

350 Madison Ave. (at 45th St.) NEW YORK

Cable Address "Rigging"



FOR SALE—No. 1141. Express Day Cruiser. 45' x 8' x 2'6". Built by Mathis. Liberty Marine Motor with self starter. Speed 30 m.p.h. Very low price. Apply RIGG'S YACHT AGENCY, 350 Madison Avenue, (near 45th St.) New York, N. Y.



FOR SALE—No. 542. Seagoing ketch, 36' x 10' x 5'. Built 1914. Frisbie Motor. Fine accommodations for three or four. Perfect condition. Price asked \$3,000. Apply RIGG'S YACHT AGENCY, 350 Madison Avenue, (near 45th St.) New York, N. Y.



FOR SALE—No. 336. ELCO 54-foot Day Cruiser. Speed 15 m.p.h. Very beautiful and easy to handle. Very reasonable price. Apply R16G'S YACHT AGENCY, 350 Madison Ave. (near 45th St.) New York, N. Y.



FOR SALE—No. 543. Raised Deck Cruiser, 40' x 10'6" x 3'3". Palmer Motor 24 H.P., Heavy Duty Type. Very comfortable accommodations for four or five aft. Owner very anxious to sell and will sacrifice for quick sale. Apply RIGG'S YACHT AGENCY, 350 Madison Ave. (near 45th St.) New York, N. Y.



FOR SALE OR CHARTER—No. 1292. Twin screw Houseboat, now in Florida and ready to cruise. Most unusual accommodations including two double and three single staterooms, two bathrooms, three owner's toilets. Everything in best of condition. Most attractive offering. Apply RIGG'S YACHT AGENCY, 350 Madison Ave. (near 45th St.) New York, N. Y.



FOR SALE—No. 430. Bridge Deck Cruiser, 32' x 9' x 4'. Built 1920. Scripps Motor, fitted with self starter. Accommodations for five. Complete inventory. We consider her the best small cruiser available. Apply RIGG'S YACHT AGENCY, 350 Madison Ave. (near 45th St.) New York, N. Y.



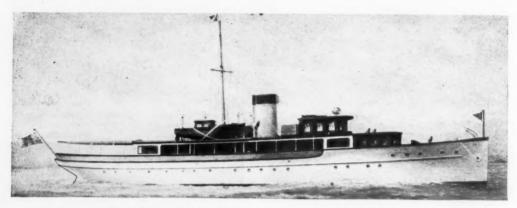
FOR SALE—No. 1003. 46' Cruising Power Houseboat. 2'2" draft. Built 1921. Speedway Motors, 100 H.P. each, with electric starter. Two double staterooms and bathroom. Fine deck saloon. Galley also on deck. Very moderate price. Apply RIGG'S YACHT AGENCY, 350 Madison Ave. (near 45th St.) New York, N. Y.

### "Service that's Different"

#### JOHN H. WELLS

DESIGNING ALTERATIONS 347 Madison Avenue, New York City Telephone Murray Hill \( \begin{cases} 3810 \\ 0479 \end{cases} \)

BROKERAGE INSURANCE



115 ft. Steel Cruising Yacht designed for Mr. W. A. Fisher. Powered with 2-300 H. P. Diesel Engines.

#### WHAT WELLS' SERVICE MEANS TO YOU

Your interests are safeguarded by twenty-four years of personal experience and that of our associates selected because they have been leaders in the development of the design and construction of the larger types of cruising yachts in wood or steel.

We prepare plans, specifications and arrange contracts with builders for new yachts or reconditioning work. Our men have been identified with the development of steel and wooden yachts driven by Diesel Oil Engines, from the time of their introduction in this country.

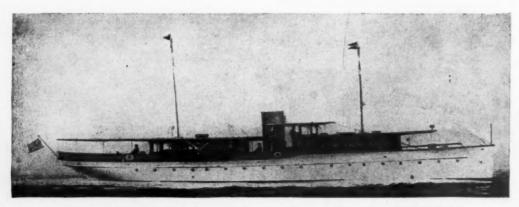
Wells' designs have always developed safe, dependable types with attractive appearances and

layouts, incorporating the client's individual taste.

As brokers we assist you in the selection of a used yacht. We are familiar with the available supply and are in a position to advise you of the exact condition of the hull and machinery regardless of whether or not it makes for a sale.

We survey, recondition and repower yachts and assist in the aelection of the proper motive power to suit the needs of the service and type of the vessel. Supervision of motor installation is made by our own engineers.

Let us give you our suggestions on your yachting problem.



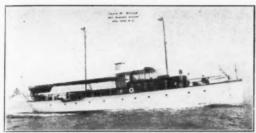
119 ft. Steel Cruising Yacht for Mr. Walter O. Briggs. Powered with 2-225 H. P. Diesel Engines.

### "Service That's Different"

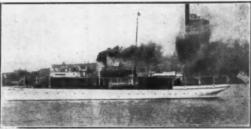
#### JOHN H. WELLS

DESIGNING ALTERATIONS 347 Madison Avenue, New York City Telephone Murray Hill \[ \begin{cases} 3810 \\ 0479 \end{cases} \]

BROKERAGE INSURANCE



NO. 1—FOR SALE—Handsome twin screw power yacht. 98 ft. over all. 16 ft. beam, 5 ft. 2 in. draft. Powered with two 8 cyl. 150 H.P. Wintons. Speed 12½ miles per hour. 3 double staterooms. 1 bath room—2 toilets in owner. quarters. Pantry, 1 galley and dining saloon in deck house. Boat in A-1 condition. Further particulars—JOHN H. WELLS.—347 Madison Avenue, New York City.



NO. 2—FOR SALE—Flush deck steel steam yacht. 122 fs. over all. 17 ft. beam, 6 ft. 6 in. draft. Excellent accommodations. 4 double staterooms and 1 single stateroom. 2 baths and 3 toilets. Hot and cold water in owner's quarters. Tiled baths. 2 deck houses containing music room and dining saloon. Everything in perfect condition. Further particulars—JOHM H. WELLS—347 Madison Avenue, New York City.



NO. 3—FOR SALE—50 ft. crulsing house boat. New 1922. I double and I single stateroom. I bath and I toilet. Powered with a 100 H.P. Model F. M. Sterling installed this Fall. Owner spent considerable money this Spring on improvements. Now in first-class condition. Can arrange for inspection. For particulars—JOHN H. WELLS,—347 Madison Avenue, New York City.



NO. 4—FOR SALE OR CHARTER—Exceptional house-boat cruiser. 85 ft. over all. 19 ft. beam, 3 ft. draft. Five large staterooms and three baths in owner's quarters. Dining saloon and galley in deck house. Entire boat refurnished and reconditioned this Fall at an expense of \$10,000. Business plans of owner, which prevent him from using the boat, makes her available for sale or charter. Further particulars—JOHN H. WELLS—347 Madison Avenue, New York City.



NO. 5—FOR SALE—An ideal family raised deck cruiser—one man operation. Built 1922, 47 ft. over all, 12 ft. 9 in. beam, 3 ft. 6 in. draft. Powered with a 4 cylinder, 40 H. P. Standard motor, controlled from cockpit. Large double stateroom, dining saloon, galley and toilet. Further particulars—JOHN H. WELLS—347 Madison Avenue, New York City.



NO. 6—FOR SALE—High speed Consolidated cruiser. Built 1923. 62 ft. overall, 12 ft. beam, 3 ft. draft. Poewred with 2—180 H.P. Speedways. Speed 22 miles an hour. Owner's quarters finished in excellent taste. Everything like new, has always had the best of care. Further particulars—JOHN H. WELLS—347 Madison Avenue, New York City.

MARINE INSURANCE

SURVEYING

VACHT BROKERS NAVAL ARCHITECTS

# Henry C. Grebe & Co., Inc. 6 NORTH MICHIGAN AVE., CHICAGO

TELEPHONE CENTRAL 1261

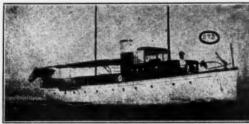
We have a complete list of all steam and power yachts, auxiliaries, and houseboats, which are for SALE and CHARTER. Plans, photographs and full particulars furnished on request.



No. 906—For Sale—Attractive 81 ft. x 14 ft. 6 in. x 3 ft. 6 in. twin-screw power yacht. Two double and one single stateroom. Pullman berth in lobby, bathroom and two toilets. Enclosed bridge deck, large cockpit and spacious deck. Equipped with two 150 h. p. motors. Speed 14 to 16 miles per hour. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



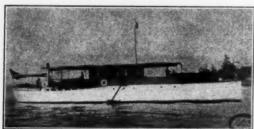
No. 1120—For Sale—55' x 13' 6" x 3' draft Modern twin screw deckhouse cruiser. Built 1923. 2 double staterooms. Two medium duty 6 cyl. Scripps motors. Very attractive price for immediate sale. Henry C. Grebe & Co., Inc., 6 N. Michigan Ave., Chicago, Ill.



No. 573—For Sale—91'x16'x5' twin screw yacht. Winton motors. Speed up to 15 miles. Two double and one single stateroom, pullman berth in lobby, bathroom and two toilets in owner's quarters. Beautiful deck dining saloon forward. Yacht in excellent condition throughout. Owner building larger yacht. Price very attractive. Henry C. Grebe & Co. Inc., 6 No. Michigan Avenue, Chicago, Illinois.



No. 500—For Sale or Charter—75' x 14' x 4' 6" gasoline cruiser built 1915. Sterling powered. Very able seaboat, excellent accommodations below and on deck. Has deck dining saloon, two large staterooms, large main saloon and bathroom. Located Great Lakes. Reasonable price. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



No. 603—For Sale—Twin-screw cruiser with houseboat accommodations. 84' x 16' 6" x 3' 6". Three double staterooms, three toilets and baths, two saloons. Powered with heavy duty 20th Century motors. Speed 12 to 14 miles. Excellent condition throughout. Reasonable price. Henry C. Grebe & Co., Inc., 6 N. Michigan Ave., Chicago, Ill.



No. 1107—For Sale—Twin screw cruiser. Recent construction. 65'x14' 6'x4'. Two double staterooms, large saloon, 2 toilets and bath in owner's quarters. Sleeps eight. Sterling engines. Speed 15 miles. Price attractive. Henry C. Grebe & Co., Inc., 6 No. Michigan Ave., Chicago, Ill.



No 324—For Sale—68' cruising power yacht. Brigantine rigged. 13' 6" beam, 5' draft. Two double staterooms, commodious dining saloon 8 cyl. Sterling motor. Cruising speed 13 miles. Independent electric plant. Has received exceptional care and is in very good condition. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



No. 1044—For Sale—Twin screw modern cruiser. 80'x13'x3' 6". Speedway engines. Speed 16 miles. 2 double one single stateroom, 2 baths. Beautifully finished and furnished. Further particulars and price from Henry C. Grebe & Co.. Inc., 6 No. Michigan Avenue, Chicago, Illinois.



No. 1124—For Sale—42'x10'x3' treat Lakes Day Cruiser. Used very little. Best condition. 6 cyl. Sterling engine. Speed up to 23 miles. Sleeps four. Large cockpit. Engine room separated from rest of boat. Price very low. Henry C. Grebe & Co. Inc., 6 No. Michigan Ave., Chicago, III.

YACHT BROKERS NAVAL ARCHITECTS

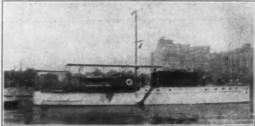
# Henry C. Grebe & Co., Inc. 6 NORTH MICHIGAN AVE., CHICAGO MARINE INSURANCE SURVEYING

TELEPHONE CENTRAL 1261

We have a complete list of all steam and power yachts, auxiliaries, and houseboats, which are for SALE and CHARTER. Plans, photographs and full particulars furnished on request.



No. 751—For Sale—Modern twin screw cruising yacht, 75' x 16' x 3' 6". Two 6 cylinder heavy duty motors. Speed up to 14 miles per hour. Unusually well laid out. Two single and one double stateroom, large dining saloon, enclosed bridge deck. Beautifully finished and furnished. Very complete inventory. Well adapted for Northern or Southern waters. Particulars from Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



No. 985—For Sale—73 ft. x 13 ft. 6 in. x 3 ft. 6 in. twin-screw cruiser. Recent build. Two single and one double state-room. Two toilets with showers. Dining saloon and deckbouse. A beautiful boat, malogany finish throughout and as good as new. Henry C. Grebe & Co., 6 N. Michigan Ave., Chicago, Ill.



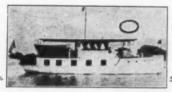
No. 1101—For Sale—Twin Screw, 92' x 14', Lawley built Winton powered cruiser. Speed up to 18 miles per bour. Three staterooms and two bathrooms in owner's quarters, large dining saloon and spacious deck. Ideal for cruising n any waters. Attractive price. Complete information from Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



No. 1082—For Sale—45' z 11' z 3' 4" bridge deck cruiser. Finest construction, mahogany planked interior and exterior beautifully mahogany panelled. Copper and bronze fastened thruout. Sleeps 6-8, has two toilets, separate engine room equipped with 6 cyl. motor, electric light plant. Speed up to 15 miles. As good as new. Price attractive for immediate sale. Henry C. Grebe & Co., Inc., 6 N. Michigan Avenue, Chicago, Ill.



No. 1018—For Sale—54' Great Lakes express cruiser. New 1922. Speed 20-25 miles per hour. Double stateroom and large main saloon. Two toilets and shower bath. Well equipped and in excellent condition. Henry C. Grebe Co., Inc., 6 North Michigan Ave., Chicago, Ill.



No. 945—For Sale or Charter—Modern 52' houseboat. Recent build. One single, one double stateroom and bath. Attrac-tively furnished. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



No. 1057—For Sale—Twin acrew. New 1921; 50 ft. x 12 ft. x 3 ft.; very complete and in excellent condition. Sleeps six comfortably in owner's quarters. Has comfortable deckhouse and roomy afterdeck. Reasonable price. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.



No. 1019—For Sale—60 ft. twin-screw express cruiser. Excellent seaboat. Speed up to 22 miles per hour. Accommodations excellent. Price reasonable. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago. III.



No. 1073—For Sale—38' x 9' double cabin bridge deck cruiser, powered with 60 H. P. motor with electric starter. Speed up to 15 miles per hour. An ideal family boat. Very complete inventory. Henry C. Grebe & Co., inc., 6 North Michigan Ave., Chicago, Ill.

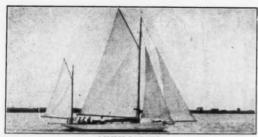


No. 548—For Sale—Attractive bridge deck power cruiser. 55 ft. x 13 ft. x 4 ft. 8 in. draft. Thoroughly modern and splen-did seaboat. Bargain for immediate sale. Henry C. Grebe & Co., Inc., 6 North Michigan Ave., Chicago, Ill.

# YACHTMEN'S SERVICE AGENCY

1233 Real Estate Trust Building, Philadelphia, Pa.

Phone: Walnut 4830 ILLUSTRATED LISTING OF YACHTS FOR SALE



- AUXILIARIES. x 15' 7" x 4' 2" C. B. Auxiliary Sloop. 40 H.P. Red
- AUXILIARIES.

  68' 9" x 15' 7" x 4' 2" C. B. Auxiliary Sloop. 40 H.P. Red
  Wing.
  63' 6" x 15' 6" x 4' C. B. Auxiliary Yawl. 40 H.P. Scripps.
  60' x 15' x 7' Keel Auxiliary Yawl. 35 H.P. Kermath.
  58' 3" x 12' 8" x 8' 6" Keel Auxiliary Yawl. 45 H.P. Sterling.
  58' x 15' x 4' 6" C. B. Auxiliary Yawl. 45 H.P. Sterling.
  50' x 13' 6" x 4' 6" C. B. Auxiliary Yawl. 16 H.P. Scripps.
  44' x 13' x 5' Keel Auxiliary Yawl. 12 H.P. Palmer. (Illustrated.)
  40' x 12' 6" x 4' C. B. Auxiliary Marconi Yawl. 15 H.P.
  Scripps.
  40' x 10' x 4' 6" Keel Sloop. No engine.
  30' x 7' 6" x 5' Keel Sloop. No engine.



- **AUXILIARIES.**136' x 25' 6" x 14' 3" Schooner. 125 H.P. Murray & Tre-

- 136' x 25' 6" x 14' 3" Schooner. 125 H.P. Murray & Tregurtha.
  78' x 17' 3" x 9' Auxiliary Schooner. 24 H.P. Palmer.
  75' x 18' x 4' C. B. Schooner. 40 H.P. J. V. B.
  70' x 15' x 9' Keel Schooner. 30 H.P. Lathrop.
  60' x 15' x 4' Flush Deck Schooner. 20 H.P. Relaco.
  54' x 15' x 8' Keel Aux. Schooner. 20 H.P. Van Blerck.
  48' 6" x 14' 6" x 6' 6" Fisherman type Schooner. 30 H.P.
  Lathrop.
  47' x 14' 4" x 3' 6" C. B. Marconi Schooner. 37 H.P. Standard.
  40' 10" x 14' x 5' 6" Keel Auxiliary Schooner. 12 H.P.
  Lathrop. (Illustrated.)



#### EXPRESS CRUISERS.

- EXPRESS CRUISERS.

  72' x 14' x 3' 4" Mahogany Hull. (2) 400 H.P. Allisons.

  65' 5" x 12' 6" x 3' 4" Mahogany Hull. (2) 300 H.P. Sterlings. (Illustrated.)

  62' x 11' 6" x 3' 10" Express Cruiser. (2) 200 H.P. Murray

  8 Tregurths.

  7' x 11' x 4' Cedar Hull. 125 H.P. Van Blerck.

  55' x 11' x 2' 9" Hand V-bottom. (2) 150 H.P. Van Blercks.

  52' x 11' x 2' 9" Hand V-bottom. (2) 135 H.P. Speedways.

  52' x 11' x 3' V-bottom Cruiser. (2) 150 H.P. Van Blercks.

  50' x 10' 6" x 3' 9" Great Lakes. 200 H.P. Van Blerck.

  45' x 10' 4" x 2' 9" Rochester. 85 H.P. Sterling.

  42' x 9' x 2' 11" Lawley Cruiser. 300 H.P. Sterling.



#### RAISED DECK CRUISERS.

- 60' x 13' x 3' 6" Raised Deck. 75 H.P. 20th Century. 60' x 15' 7" x 4' 6" Raised Deck. 75 H.P. Murray & Tre-
- 60° x 15′ 7" x 4' 6" Raised Deck. 75 H.P. Murray & Tregurtha.
  57' x 11' x 3' 4" Raised Deck. 55 H.P. Standard.
  57' x 10' x 3' 5" Raised Deck. 60 H.P. Speedway.
  45' x 10' 3" x 3' 10" Raised Deck. (2) 75 H.P. Van Blercks.
  40' x 9' 6" x 3' 6" Raised Deck. (2) 20 H.P. Kermaths.
  40' x 9' x 3' 6" Raised Deck. (2) 20 H.P. Kermaths.
  40' x 12' x 3' Raised Deck. 30 H.P. Vulcan.
  36' x 9' 6" x 3' 6" Raised Deck. 30 H.P. Vulcan.
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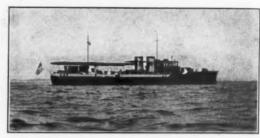
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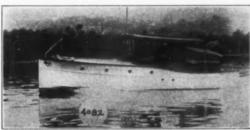
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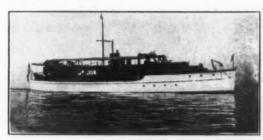
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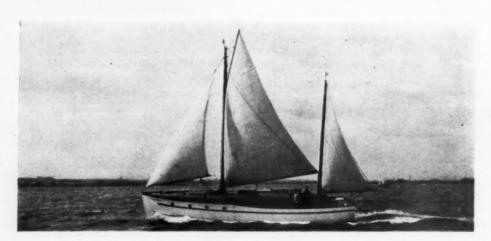
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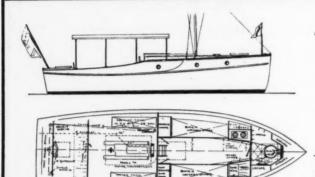
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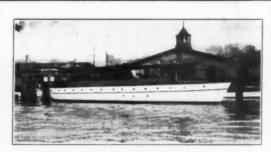
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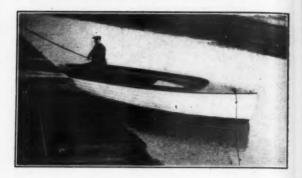
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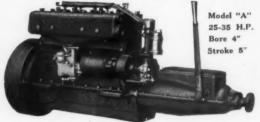
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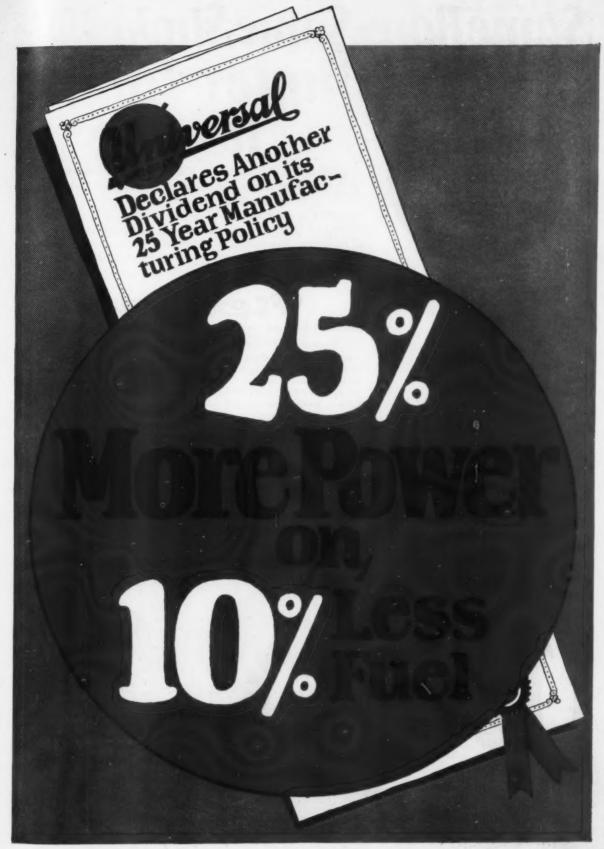


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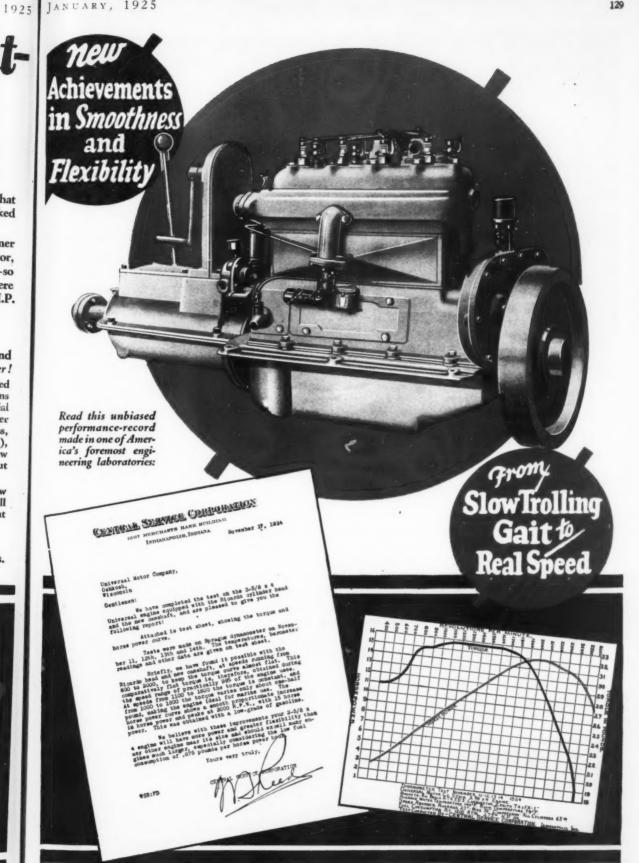
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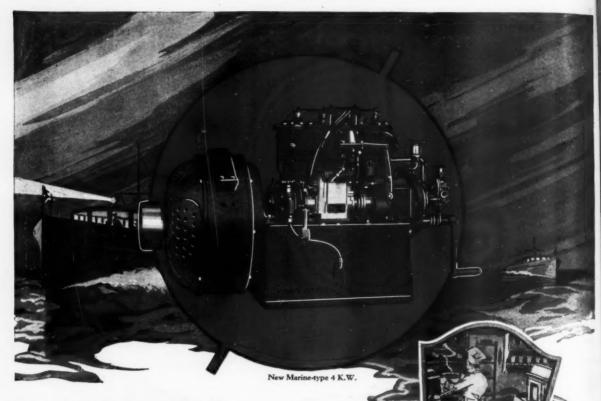
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Care for Your Engine (Continued from page 80)

then pour back a cupful into the tank for warming up the engine. Procure about a pint of the grade of cylinder oil which has been used in the engine, and have it at hand where the engine have it at hand where the engine is to be run. Attach the engine to the railing of a porch or some other convenient place where the propeller will be clear of any obstruction, and start the engine. As soon as the engine runs smoothly for a few seconds, pour the cylinder oil into the tank.

The engine will smoke and then stop, due to the excessive amount of lubricant, and the insufficient quantity of fuel. In this way the lubrication of all of the working parts of the engine, and the oiling of the rings, etc., will be in-sured. Also all of the water in the pump and the cylinders will have been expelled or dried up. Shut off the car-bureter valve if there is one, and the

bureter valve if there is one, and the contents of the tank may remain.

Remove the cover of the propeller gear housing, and clean out the old grease, which probably contains some water. Take out the drive-shaft, or the shaft running from the engine down to the propeller and grease it well, as it is usually made of steel. If it is not convenient to remove the shaft, pour oil into the end of the tube, and it will probably oil the shaft sufficiently. New grease should be nacked in the propelgrease should be packed in the propel-ler gear housing, and the cover replaced. Remove the rubber or metallic tubing

Remove the rubber or metallic tubing to the water pump, or in any other way see that the check valve is not retaining water in the pump. Replace the rubber hose, or if a new one is required, get it now while you think of it.

Turn down all the grease cups, and refill them. Oil all bearings and coat all bright work, whether brass or steel, with grease. Remove the spark plug, cylinder, after which replace the plug and and pour a small quantity of oil into the rock the flywheel backward and forward to distribute the oil.

distribute the oil. You will be repaid for this trouble in many ways, and perhaps the greatest sat-isfaction will be had in the realization that on the first day in Spring, when you feel the urge to put the little boat over, the put-put will take up her work with a joyful throb, and the thrill you will experience in cutting the cold clear water will recall to mind the many happy hours spent in enjoying the greatest water sports, that of outboard-

motorboating. E. L. S., ATLANTIC CITY, N. J.

#### Disposing of the Bilge Water

(Continued from page 82)

(Continued from page 82) strainer will collect the larger pieces, there will always be more or less sand and grit in the water that will pass through any strainer that can be used. This grit is not good for the pump gears and bearings and some of it will settle in the water jacket, where it fills up the bottom and later will be very apt to cause trouble. Small bits of wood or string may pass through the pump without trouble, but why take the chance of disabling the engine. The circulating pump was not made to handle dirty bilge water, nor was it put on the engine for that was not made to handle dirty brige water, nor was it put on the engine for that purpose. If put on the bilge and forgotten, the bilge will go dry and the engine may run without cooling water until so TORAGE—REPAIRS—MARINE RAILWAY ten, the bilge will go dry and the engine may run without cooling water until so W. B. M., Newburgh, N. Y.

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overheated that serious damage results.

Don't do it.

For handling water containing bits of such things as collect in the bilge the centrifugal or rotary type of pump is the most efficient and least liable to damage, but this pump must be primed before it will pick up the water and it is not efficient at low speeds. The gear pump and the plunger pump are self priming but foreign matter in the gears or under the check matter in the gears or under the check valves of the plunger pump may cause the pump to lose the water.

If you would get service and satisfaction from a home built pumping outfit, get a good, used, 6 volt starting motor and a ½ inch rotary or gear pump. Connect them with a fabric universal joint or a flexible coupling and mount on a hardwood base. Locate the unit near the pump well and wire to the battery with a switch in the line. This pump is always ready as long as there is life in the battery, whether the engine is running or not. The current consumption will be nowhere near that required for starting, but it would be a good idea to run the engine while pumping to ease up on the battery

A plunger pump may be located on the bulkhead, in line with the flywheel and driven by a connecting rod, the crank being a cap screw tapped into the flywheel Before starting the motor, hook up the connecting rod and the pump will operate until disconnected.

No matter what pumping arrangement you use an efficient strainer is necessary, and to be efficient the area must be large. Make a wire basket of 1/4 inch mesh net-ting that will fit between the frames at the lowest point and cover with 1/16 inch mesh brass or copper screen. Solder on legs to keep the bottom not more than 1/4 inch from the planking so as to get service from all the screen area. Keep the suction one quarter its diameter from the

#### The FLEETWOOD

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the famous Biscayne regatta course which will be the scene of the national motorboat championships in March. scene of the national motorboat championships in March. Across the Bay at Hialeah, within easy motor distance, is the new race track which will attract thousands here this winter to say nothing of Jai Alai and greyhound racing at the same resort. The Tropical League of Fine Arts selected the Fleetwood roof for its annual ball December 29; there will be a midnight New Year's party on the roof and on January 15th the new hotel will be opened formally. Reservations may be had now by addressing



#### Fleetwood Hotel Corporation

Miami Beach, Florida

FRANK FORD

Manager

J. PERRY STOLTZ

President

#### Where is Leiv Eriksson?

(Continued from page 70)

to the world. This circumstantial story, which was immediately proved to be lacking in the remotest shred of truth, caused a proved to be lacking in the remotest shred of truth, caused a good deal of confusion when in mid-October the Cruising Club of America, an organization of blue water yachtsmen, began the search for Levi Eriksson. The Cruising Club, acting through Commodore Martin S. Kattenhorn, Herbert L. Stone, and Henry A. Wise-Wood, enlisted the services of the state departments of the American, Canadian, Norwegian and other governments, and every possible means of search whether by wire, radio, or vessel was instituted.

The Western Union Telegraph Company expedited the important matter, but at every turn the searchers were confronted with the news that the lost ship had arrived safely in Battle Harbor. Flocks of cablegrams came from abroad saying that Lloyd's had posted her safe arrival, and so it must be true. Eventually Lloyd's was persuaded to contradict the news. In the meantime it was learned that an American cousin of Fleischer's had heard via Norway of the departure of the Viking boat from Julians-Haab on September 8th.

Contact was thereupon established with a private radio sta-

Contact was thereupon established with a private radio station in Greenland in the vicinity of Julians-Haab, which lies on the west coast above Cape Farewell, and at first the news on the west coast above Cape Farewell, and at first the news from this station was disheartening. It reported that no word had been heard of either the departure or the arrival of Nutting and his crew. Within a short time, however, this message was cancelled and it was declared that Leiv Eriksson had actually shoved off for Battle Harbor on the 8th—the date mentioned in the dispatches from Norway.

But when this news came through, the Eriksson was already six weeks overdue Battle Harbor. The distance across Davis Strait is only 600 miles and even with the poorest breaks in the way of wind should have been accomplished in two weeks.

Strait is only 600 miles and even with the poorest breaks in the way of wind should have been accomplished in two weeks. The Navy Department, requested on October 24th to send a cruiser in search of the missing sloop, had taken no action, and affairs were at a standstill.

In justice to the United States Navy which seemed at this juncture to show a singular disregard for the lives of American citizens, an explanation may be hazarded. The present writer does not enjoy the confidence of Navy officials, but he knows that our enlightened Congress, placed in office by a still more enlightened electorate, has put the Navy on a starvation fuel

allowance, and it may be conjectured that the Navy cannot dispatch a ship a mile off its routine course without the intervention of an act of God. If there were more voting seafares like Nutting, Hildebrand, and Todahl, the legislative branch of our Government might yet permit us to be a maritime nation.

However, we are fortunate in having an Executive who executes. On October 31st at 1 P. M., Mr. Wise-Wood telegraphed President Coolidge and put the known facts before him. Exactly three hours later President Coolidge wired back that Captain Kalbfus of the scout cruiser Trenton had been that Captain Kalbfus of the scout cruiser Trenton had been given orders to get under way to search for Leiv Eriksson. Captain Bob Bartlett, the Arctic explorer who was Admiral Peary's right-hand man, was reached by wire and volunteered his services. Conferences were held for the determination of the area to be combed, and as soon as the Trenton was ready for sea she departed for Greenland.

On the day of her departure Herb Stone received from Donald B. MacMillan a report of the weather conditions during the week of Nutting's sailing from Greenland. This report chronicaled the underlying nof winter in a bad storm off the Labradot

cled the ushering in of winter in a bad storm off the Labrador coast on September 11th, and a violent gale six days later—one of the worst that MacMillan had ever experienced.

This information—which corroborated the conjecture of Captain Bartlett—was radioed to the Trenton. She, unarmored, and with outstanding screws, was unable to search in the fields of Polar ice between Greenland and Labrador, and was directed by Captain Kalbfus to the area southeast of Cape Farewell. It was thought that if Leiv Eriksson had been dismasted midway between Julians-Haab and Battle Harbor, she would have drifted before the prevailing northwest winds to this locality. However, the Trenton returned to New York on November 16th, her search unsuccessful. search unsuccessful.

While she was at sea, the press reported a derelict sighted in the vicinity of New York and offered the opinion that this was the hulk of the Eriksson. Competent authorities decided was the hulk of the Eriksson. Competent authorities decided however, that, owing to the prevailing direction of the current which sweeps down the coast of Labrador to encounter the north and easterly drift of the Gulf Stream, the Eriksson could not have arrived in the reported position of the derelict—which latter was judged to be an unlucky rum runner.

The best efforts of the U. S. Navy, therefore, and the constant watchfulness of merchant mariners in the North Atlantic

(Continued on page 134)

Advertising Index will be found on page 304

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#### Where is Leiv Eriksson?

(Continued from page 132)

have failed to discover Nutting and his companions. If ther yacht was blown southeast in the gale reported by MacMillan she should, even if disabled, have drifted across the steamer lanes weeks since.

But there remain at least two possibilities on which the friends of these intrepid amateur explorers base their belief that they will show up in the spring of the year. Late in November. Commodore Kattenhorn received word from an English firm of importers of Arctic produce that their vessel (unnamed in the letter) encountered a violent southeasterly gale in the vicinity of Julians-Haab on the 8th of September, continuing until September 11th, and swinging into the northwest. This was, no doubt, the same storm that visited Labrador on the 10th So, if Nutting, putting forth from Greenland, encountered the southeasterly, he may have sought the nearest harbor and found shelter there. But being in port in Greenland is not like riding to a mooring in a snug Long Island cove, and, having arrived inside, the Eriksson may have been hemmed in by ice, blown down by the ensuing northwesterly.

The country along this southwest coast of Greenland is described by those acquainted with it as being virtually impassable to man or beast during the winter months. Due to pinnacle rocks on the seaboard and glaciers inland, two harbors twenty miles apart may be as far removed from each other in point of communication as north is from south. Hence there is a possibility that Nutting and his crew are wintering in some harbor which is not even accessible to the Eskimos.

The other possibility is that instead of being turned back by The other possibility is that instead of being turned back by the gale of the 8th, Leiv Eriksson was blown northwest into the ice and there caught. Once surrounded by ice, the boat would lose its own volition and be obliged to swing slowly northwest. Hopeless as the mere suggestion of this contingency appears, there is yet ground for hope.

Anthony Fiala, the Artic explorer, recently called attention to the case of a party of nineteen men, women, and children who lived marooned on an ice cake for six months, all surviving to tell the tale. He also recalled to mind the experience of the captain and crew of the Hansa who, abandoning their ship on

tell the tale. He also recalled to mind the experience of the captain and crew of the Hansa, who, abandoning their ship on September 19th, 1869, lived on the ice until May 17th, 1870, and on the 4th of June made their way to a settlement on the southwest coast of Greenland.

The words "Abandon hope all ye who enter here," were written of Inferno, and not of the ice-capped Polar regions. For the Arctic the motto may well be, "Continue to hope, all ye whose friends have entered there." The Arctic night is long and it keeps its secrets well. But spring comes, and with it the American friends of Nutting, Hildebrand, and Todahl, and the well-wishers of Eleischer, look confidently to the arrival of well-wishers of Fleischer, look confidently to the arrival of

#### Pixie, a V-Bottom Row Boat

(Continued from page 75)

examined the details will be quickly learned.

examined the details will be quickly learned.

The keel with its stem, stern, forms, etc., is shown set up. If should be placed at a d'stance of approximately 18 inches from the floor so as to give room below for driving fastenings, and fitting planks. If four shores made of 2 by 4 inch spruce are braced securely to the floor they will give ample support to the thing and then with some braces to the rafters above, the frames can be kept in exact position. It is rather innortant to set the frames up both square to the center line and plumb; and as well at the right height from the base line. A lopsided craft will be the result of peglect here.

craft will be the result of neglect here.

The batten behind the seam in the topside planking will be

The batten behind the seam in the topside planking will be made of 3% by 2 inch white oak, in a single length, of course. It will be fastened to the frames with 1½ inch No. 8 galvanized iron screws, one to each frame. At the stem it should be notched into the rabbet as shown and as well at the stern. The chine piece will be made of 5% by 1½ inch white oak and fastened much after the manner of the seam battens. The lower edge of the chine should not be dressed off until after the side planking has been applied.

There will be a bilge batten through both sides of the bottom made of 3% by 2 inch white oak; this should follow midway between the keel and the chine on every frame. The fastenings will be the same as for the seam battens for the side planking. It would be well to fasten the floor timbers to the keel with ¼ inch diameter bolts having the heads let into the keel and nuts inside, and turned up on washers. Much of the strength of the boat depends upon these keel fastenings. They therefore should be fitted carefully. Nails have no place in a small boat, especially if the construction is light. especially if the construction is light.

(Continued on page 136)

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#### Pixie, a V-Bottom Row Boat

(Continued from page 134)

The side planking will be laid in two strakes, and of 7/16 inch white cedar. Along the batten and chine screw fastenings should be employed setting these at 4 inch centers. Get out the bottom plank first and as this is being fastened along the chine and batten, paint the faying surfaces with Jeffery's liquid marine glue; the seams then will be water tight and remain so. The bow and stern ends of the side planks should also be screw fastened. Screws should be used 1½ inch long and number 8 size. After the two strakes on the top sides have been fastened it would be well to run the moulding around the sheer as this will help stiffen the sides, this will be made of 5½ by 1½ inch spruce fastened from the inside through the planking, and also to the tops of the frames with copper rivets. If it is desired to use a rope or hose fender around the sheer it would be well to run this moulding about ½ inch below the edge of the top plank so as to form a rabbet into which to fasten the

hose.

The bottom planking will be laid cross ways with the seams leading aft as shown. These planks will be 7/16 inch thick cedar and not over 5 inches wide. Begin laying the bottom at frame No. 6 and proceed both ways. At the keel the fastenings should be No. 8, 1½ inch screws set three to each plank. The chine should be fastened the same; but the fastenings into the bilge batten will be shorter, screws ¾ inch long will suit here. Into the frames the 1¼ inch screws will do. Again in the seam along the chine and at the keel, set the planks in the liquid marine glue. If desired the bottom can be planked length ways using three strakes each side; this of course will necessitate letting in two battens each side to back the seams between the planks.

The sides and bottom should be planed off and sanded. It

The sides and bottom should be planed off and sanded. It will not be necessary to caulk or putty the seams that land on the battens, but the cross seams in the bottom should be caulked with a few strands of cotton wicking. Do not drive the caulking in too tight for if you do when the planks swell they will buckle. The bottom seams will be filled with white lead putty after

having been payed.

The flooring will be made of ½ inch cedar and fastened to the floor timbers and the frames with round head brass screws so as to be removed if necessary. Do not fit the seams tight, rather allow an eighth inch or so because the wood will swell

a lot and one might just as well give room for this. A hole about 5 inches square should be cut under the middle seat to permit sponging the bilge. It might also be well to leave a short length of the flooring loose so as to bail water out of the bilge.

the bilge.

The seat rising will be made of 5% by 1½ inch spruce and extends from the stern to the foremost frame; this should be screw factored to the frames.

extends from the stern to the foremost frame; this should be screw fastened to the frames.

The after seat will be made of ½ inch spruce and laid in a fore and aft direction, thus a strong back will be needed under its forward edge as shown. The three other seats will be made of ¾ by 10 inch spruce. There should be a ¾ inch knee between the center seat and the rail as shown and knees in the quarters. Another knee will be fitted forward for without this the job will not look finished. All the seats should be hand planed and sanded and then if they are varnished the surface will be good to look at.

The pads for the row locks should be placed as shown and made of 7/16 inch white oak. Fasten these with copper rivets; four to each pad. If the center of the row lock socket is placed 9 inches abaft the aft edge of the rowing thwart, the oars will be properly placed. Use galvanized iron row locks having sockets with side plate as well as top plate; with this style socket four fastenings are used and the sockets will stay put. A ring bolt in the stem and stern will complete the boat with the exception of painting and varnishing.

the exception of painting and varnishing.

If the work has been done well, varnish the sides, the seats and the flooring. Paint the bottom both inside and out. Antifouling paint should be used below the water line and deck paint inside.

The materials for a boat of this kind including paint, hardware and oars will cost about \$75.00 and she can be built for from \$175.00 to \$200.00, depending upon the locality.

Arrangements have been made to supply interested readers with blue print copies of the drawings for Pixie, to a scale of one inch to the foot, at moderate cost. Write to the Editor of MoToR Boating, 119 West 40th St., New York, N. Y., for particulars

#### A New Outboard Engine

In addition to a very surprising outboard engined cruiser the Johnson Motor Company of South Bend are showing at the New York Show for the first time, their new light weight single cylinder outboard engine of only 20 pounds weight.

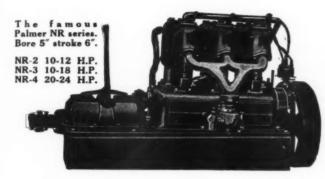


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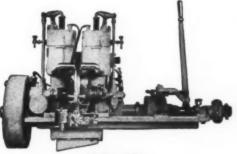
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#### On to Florida — Then Manhasset Bay

(Continued from page 83) (Continued from page 83) sent once around the course behind the pace maker in single column formation. The official start will be when the bow of each boat crosses the starting line in this same single column file. The start of boats which are more than ten seconds astern of the boat ahead will be automatically taken ten seconds after the boat ahead has crossed the starting line. This method of starting the boat will tend to deauton with the boat and the deauton will tend to deauton with the boat and the boat and the deauton will tend to deauton with the boat and the boat and the deauton will tend to deauton with the boat and the deauton will tend to deauton with the boat and the deauton will tend to deauton with the boat and the deauton will tend to deauton with the deauton will tend to deauton with the boat and the deauton will tend to deauton with the deauton will tend to deauton with the boat and the deauton will tend to deauton with the deauton will tend to deauton with the deauton will tend to deauton will be deauton with the deauton will tend to deauton will tend to deauton will be deauton with the deauton will be deauton with the deauton will be deauton wi starting the boats will tend to do away with any unsportsmanstarting the boats will tend to do away with any unsportsman-like handling of the leading boat, tending to prevent the boat astern from getting past. As very often happens these days, a boat which is only slightly faster than a boat ahead, cannot get through the wash of the leading boat in order to take the lead. This new method permits the boat which is really the

lead. This new method permits the boat which is really the faster one in the race to win.

The race for the Fisher-Allison Trophy will be open to displacement craft of over 32 feet in length powered with motors of not over 1075 cubic inches. The race will consist of three 50-mile heats with no repairs allowed between heats.

The Fisher-Allison Trophy is now held by Gar Wood who won it at Buffalo last summer. Two legs on the trophy have heaven by Welb Lay and one each by S. R. Fagan, Humphrey

won it at Buffalo last summer. Two legs on the trophy have been won by Webb Jay and one each by S. B. Eagan, Humphrey Birge, H. B. Greening and Gar Wood. Gar Wood, Jr., has challenged his dad for the trophy and the race will be held this winter at Miami. Gar Wood has promised to send at least two boats and perhaps three to race for this trophy. The boats over 32 feet in length competing for the Dodge Trophy will also be eligible for the Fisher-Allison class.

While it may seem a long time before the next race for the American Power Roat Association, Gold Cup is to be held yet.

While it may seem a long time before the next race for the American Power Boat Asociation Gold Cup is to be held, yet the Race Committee of the Columbia Yacht Club, the present holders of the famous cup, is already busy with the details. It has been definitely decided to hold the race on Manhasset Bay, a branch of Long Island Sound, directly opposite City Island, New York City. Manhasset Bay, besides being ideally located as regards New York City and all water tributary thereto, is the home of three large yacht clubs, the Manhasset Bay, the Port Washington and the Knickerbocker and not over a few miles distant from such clubs as the Larchmont Yacht Bay, the Port Washington and the Knickerbocker and not over a few miles distant from such clubs as the Larchmont Yacht Club, the New York Athletic Club, the Bayside Yacht Club, the City Island Yacht Club, the New Rochelle Yacht Club, the Huguenot Yacht Club and many others. In addition to this, Manhasset Bay is the anchorage of probably the largest and most representative fleet of motor craft to be found during the summer months anywhere. The harbor is practically land locked, assuring good water to race on at all times, has a sufficient depth to permit craft of all draft to enter and view the races, and its nearness to New York City will be popular with

the visiting yatchsmen.

The Gold Cup event will be held either on Saturday, August 29, or Sunday, August 30. But the race for the Gold Cup will be but one of the many feature races, in fact, the event will be known as the New York Gold Cup Regatta. Races will be scheduled for all types of displacement craft, for cruisers and express cruisers. for 151 cubic inch hydroplanes and for the Coast Guard boats as well as for boats powered with outboard motors.

The slogan "On to Manhasset Bay" has been adopted and all

The slogan "On to Manhasset Bay" has been adopted and all yacht clubs will be asked to plan their club cruises to Manhasset Bay and schedule races from their home ports to Manhasset Bay finishing there on August 27th or 28th. Suitable prizes will be offered for all these events.

The Middletown Yacht Club, the present holders of the Ex-

The Middletown Yacht Club, the present holders of the Express Cruiser Championship Trophy, have already announced that they will hold a race for this trophy from Middletown, Connecticut, to Manhasset Bay on August 26 and 27. Plans are well matured for holding the ocean cruiser race for the James Craig Trophy from Philadelphia to New York, finishing at Manhasset Bay on August 27. It is hoped to hold the Annual race for the Handicap Cruisers Championship of America, open to the class of boats known as Cruisers and Fast Cruisers, at the time of the Gold Cup Regatta, starting from Manhasset Bay on August 28 and going over a 75-mile course on Long Island Sound and finishing at the starting point.

on August 26 and going over a 75-mine course on Long Island Sound and finishing at the starting point.

Frederick R. Still, President of the American Power Boat Association, has been chosen General Chairman of the New York Gold Cup Regatta Committee. He plans to form a committee from all the prominent yacht clubs near New York City to handle the many details which must be taken care of.

#### Silver Heels II Going South

Word has been received that the yacht, Silver Heels II, has recently left Detroit for Miami Beach, where she will be tied at the docks of the Fleetwood Hotel. The yacht is owned by Commodore A. A. Schantz, of Detroit, who has charge of the annual regatta, and has been prominent in Miami Beach. winter social and yachting circles for several years. The Fleetwood docks are now completed.

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## The Sport Twin

Standard of Values in the Lightweight Motor Field

Because it is an Evinrude, backed by fifteen years' domination of the rowboat motor industry—

Because it out-performs other motors in eager power, smooth speed, and easy starting—

Because it excels in convenience of operation, through its new needle-valve carburetor, safety reverse and automatic tilt-up—

The Sport Twin is the standard by which all lightweight boat motors are judged.

Others are claimed to be "as powerful as", "as handy as", and "as speedy as" the Sport Twin. But always remember:

"Other Motors Are Not Evinrudes"





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## EVINRUDE

#### Sport Twin

FORTY pounds of quiet, vibrationless, dependable power - the ideal lightweight motor. Easy starter whirls flywheel past four firing points - no rocking of flywheel. Super-power flywheel magneto shoots hot sparks at all speedseliminates heavy, uncertain batteries. New needle valve carburetor gives perfect results under all weather and fuel conditions. Safety Reverse \_ at a lift of the tiller-without swinging motor around. Simple and safe. Safety Tilt up\_can be locked for starting.

#### Two H. P. Single

The rugged motor that has built and maintained the Evinrude's world-wide reputation. Preferred by many sports men, professional fishermen and boatmen for hard, year-round, knock-about service. Very economical, both in price and operation.

#### Big Twin

Fastest and most powerful outboard motor. Built with the same rugged strength and with the same sure-fire dependability as the Single-but with twice the power. Four full horsepower - to drive the average boat 10 to 12 miles an hour.

#### Inboards

Made in two sizes for permanent installation in launches and canoes. They have many of the distinctive features of Evinrude outboard motors. The single cylinder motor delivers seven-milesan-hour speed in an ordinary boat while a speed of 12 miles an hour is attained by the twin in an 18 foot canoe. Note the new tank mounting on the twin.

#### EVINRUDE **Motor Company**

MILWAUKEE, WISCONSIN

One Cylinder Inboard



Two Cylinder

Inboard

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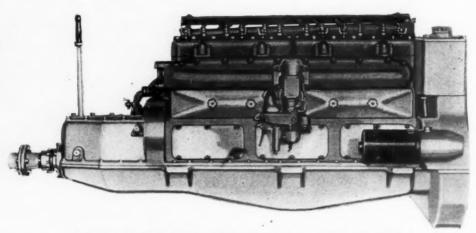
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## The NEW SIX



Carburetor side of the new Kermath Six. Bore 43/8". Stroke 51/2". Piston displacement 495 cu. in.

Medium Speed, 40-65 H.P. at 600-1200 R.P.M. Weight 1500 lbs.
Price \$1350 complete.
High Speed, 75-100 H.P. at 1500-1800 R.P.M. Weight 1075 lbs.
Price \$1450 complete

Prices include dyable ignition with Bosch magneto, distributor, electric starter, generator, 120 ampere storage battery.

NINETEEN TWENTY-FIVE sees an epoch making addition to the Kermath line—a six cylinder model that sets a new standard of smooth velvety power, dogged reliability, and incidentally a new standard of engine value.

For many months Kermath customers have been asking us when we would offer a six. Even while we were working on it our secret leaked out. Before we had figured up the costs and set the exact price, orders for fifty thousand dollars worth of the new type piled up. Old friends were willing to buy it on faith.

They won't be disappointed. First trials in runabout and cruiser confirmed our fondest expectations. The new motor is a wonder. We have put our best into it, the latest ideas in engine design, the best materials that money can buy and all the practical experience we have gained in 13 years of marine motor manufacturing.

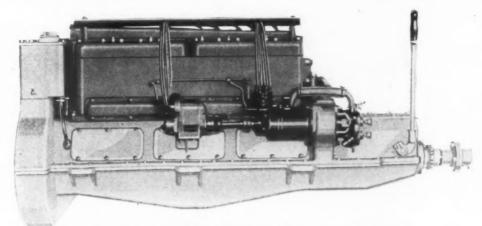


A Liggett 26' x 6' 6" runabout just finished by A. G. Liggett & Son, With a Kermath 100 H.P. Six it makes 30 miles an hour.





### bouts & Cruisers



Magneto side of the New Kermath Six. Notice the compactness and clean cut appearance produced by the single enbloc cylinder casting. All enclosed, not a moving part betrays that the motor is running except a few inches of the magneto shaft. A separate oil tank is mounted on the flywheel housing. The water pump is accessibly located at the after end of the magneto shaft.

MARINE engineers and yachtsmen alike are coming to the conclusion that any engine over 350 cu. in. must be a six. Its perfect torque and wonderful freedom from vibration cannot be equalled in a four of equal piston displacement. But until now a good six meant high cost and plenty of room. The new Kermath Six cost less, weighs less and requires less room than a big four. Its compactness lends itself to the conservation of valuable space.

Buyers find the fact that a new motor has been announced isn't half so important as the fact that it is a Kermath. The name Kermath on a marine engine means the standard by which all others must be measured.

The very announcement of this new motor has met with instantaneous response from buyers to such a large degree that it has necessitated our building an addition to our present factory. We sincerely urge all our friends to place their orders for this wonderful new motor as early as possible so as to insure prompt delivey.

The 36x11 ft. sedan cruiser recently built by Defoe Boat & Motor Works, Bay City, Mich. Speed 12 miles perhour with the Kermath Six.

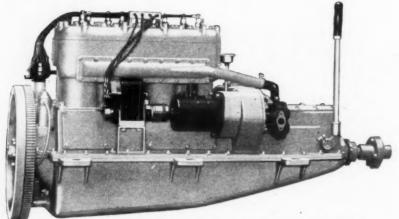


NO KERMATH HAS EVER WORN OUT





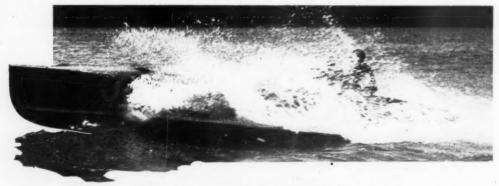
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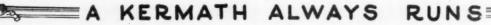
A four-cylinder Kermath of 330 cubic inches displacement, adapted for service in three different speed ranges. 35 H.P. for medium speed cruisers and work boat. 50 H.P. for faster cruisers and runabouts. 70 H.P. for high speed express runabouts.

THE Kermaths 35, 50 and 70 need no introduction. For nearly two years now they have been making records and making friends. More Kermaths of this model have been installed in boats within that period than any other engine of equivalent size.

Kermaths 35-50-70 are favorites with builders of standardized boats. The great Lakes Seavilla, the Gordon Specialized Cruisers, the International 32, the City Island Cruiseabout and scores of other standard types have this engine for regular equipment. Boat builders are expert judges of engine values and they have chosen this Kermath because they have found it combines good speed with reliability, economy and low first cost.



Struan II, owned by J. S. McCannell, Toronto, Ont., Canada. Speed 30 miles with a Kermath 70. This boat was operated throughout the last summer at 2100 R.P.M. without a cent of repair expense.



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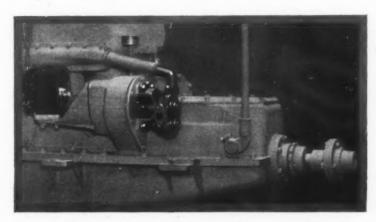
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35 - 50 - 70



Closeup of the Kermath 35-50-70 showing large accessible water pump, magneto, oil stuffing box on propeller shaft, and oil pressure gauge connection.

KERMATH ENGINES bespeak accessibility throughout. They are in fact many years ahead of general marine motor design. For instance, the Kermath 70, a strictly runabout motor, has Duralumin connecting rods, Lynite aluminum split skirt pistons, higher compression, larger carburetor, bigger intake valves and many other exclusive features that are not found on some of the highest priced engines.

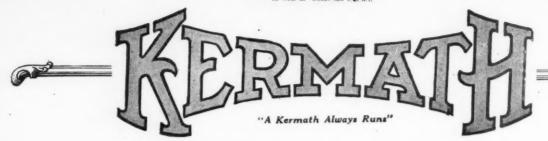


Four years' service—Hauled 200,000 passengers. Not 5 cents for repairs. Jno. A. Bast, Canton, Ohio, owner.—Ask him.

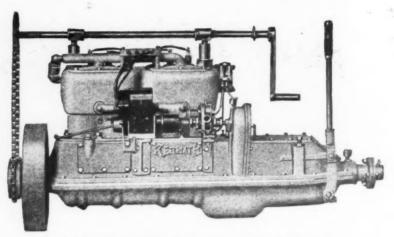
The Kermaths 35 and 50 like the 70 H.P. model have such outstanding refinements as 5 bearing crankshaft, full pressure lubrication through drilled crankshaft and an advanced water circulating system. The camshaft has 5 bearings and is submerged in an oil bath. Every Kermath built is still in service and is an active advertisement of Kermath quality and performance. Is it any wonder then that the prices are low when there exists a tremendous demand for them, making possible large production and quick turnover of stock?

NO KERMATH HAS EVER WORN OUT





10-12 H. P. 16-18 H. P.



The Kermath 10-12 H.P. and 16-18 H.P., a sturdy motor designed especially for cabin cruisers and sloops, where rear hand starter is a convenience. It is a high class 4-cylinder, 4-cycle job.

THE Kermath 10-12 H. P. and 16-18 H. P. engines are the favorite with boatmen who want 4 cylinder power in an engine of smaller design, with the same performance efficiency that has made Kermaths world famous. These models are unusually powerful and their maintenance cost is exceptionally low for engines of their power.

The regular equipment on the 10-12 and 16-18 H.P. models includes a safety front hand starter, a decided advantage over the rear hand starter that so many engines have. This is a very desirable and convenient feature for power plants used on cabin cruisers or auxiliary sloops where structure of the boat usually demands that flywheel be half under the floor and the rear end under the companionway. You'll find this power plant will dig into any job without faltering and that after many years of service it will still disclose the worth of the quality built into it.

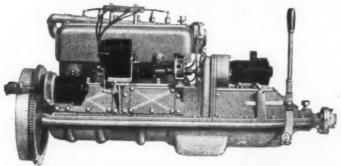


A KERMATH ALWAYS

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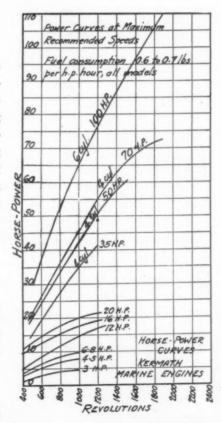
20-25 H.P.



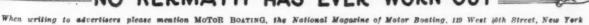
20-25 H.P. Kermath, a four-cylinder, four-cycle engine of a wide range of adaptability. 600 to 1200 R.P.M. Weight 535 pounds. Bore 4". Stroke 4". Price \$535.

THE Kermath 20-25 H.P. is not a stranger to boatmen. For over a decade this thrifty engine has been the best friend of thousands of commercial and pleasure boat owners. Like the rest of the famous line of Kermaths it is always dependable and highly economical down to the last atom of fuel. Designed by experts who are not only engineers of the highest standing but men who know and appreciate the power needs of the majority of boating requirements, this engine in technical details approaches the limit in internal combustion precision.

The crankshaft and connecting rods are made of 31/2% chrome nickel steel-a material so expensive that even builders of the finest racing engines do not always use it. The camshaft is drop forged, with cams integral, from our own particular alloy.



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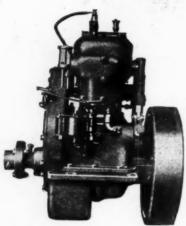
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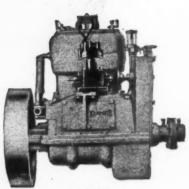
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3-4 H. P. 6-8 H. P.



3-4 H.P. Weight 175 lbs. Costs only \$135



6-8 H.P. Weight 315 lbs.

HERE are the two smallest Kermaths, but small in size only. They have that same vim, vigor and superlative quality of their bigger brothers. And, almost human like, they faithfully serve their owners with unvarying dependability day in and day out. Every one who examines these small engines is astonished at their power but more so when they learn of their low cost.

You who like to fish or want a motor for trolling, or knocking about in a small boat, cannot get? better marine engine "buy" than these trouble-proof Kermaths. And they are as simple as A. B. C. to operate. The Kermath 3-4 H.P. equipped with Bosch magneto and impulse coupling sells for only \$135.00.

You who are not entirely familiar with the entire Kermath line should write today for our latest catalog.



## Oberdorfer Spumps

## The Designer's Choice

DESIGNERS of marine engines built for service in coastwise or inland waters specify Oberdorfer Pumps because they are dependable. Made of bronze throughout, with metal packing glands, large bearing surfaces, expert machining and careful assembly—a full guarantee of uninterrupted service during the life of the motor.

Make sure that your motor boat engine is equipped with an Oberdorfer Circulating Pump for its cooling or lubricating system.

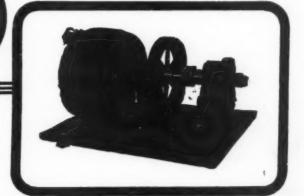
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#### M. L. Oberdorfer Brass Co.

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There is a type or form of Oberdorfer Pump for every use in pumping liquids.

Write for FREE illustrated book on Oberdorfer Pumps.





#### BELT DRIVEN PUMP

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Capable of efficient service for many years without attention. Mounted on base plate of iron.

#### MOTOR DRIVEN PUMP

Permanent or portable installation. For bilge, gasoline supply tank and other pumping uses. In all practical sizes and forms.

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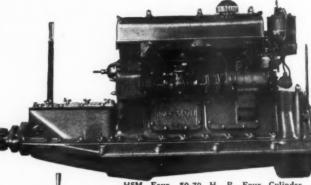
## ......HALL-SCOTT

#### HSM SERIES

**FOUR** 

SIX

Full pressure lubrication, Overhead valve action. Overhead camshaft, Governor an integral part of camshaft; prevents injurious racing of engine in a sea.



HSM Four. 50-70 H. P. Four Cylinder. Bore  $4\frac{1}{4}$ ". Stroke  $5\frac{1}{2}$ ". Weight 1290

THE flawless precision, exceptional design and skilful workmanship of Hall-Scott marine engines has earned so enviable a reputation for performance, that there now exists an insistent demand from discriminating yachtsmen for Hall-Scott powered boats.

HSM Six. 75-100 H. P. Six Cylinder. Bore 4½" x 5½". Weight 1590 lbs.



The new HSM series is adding daily to the laurels already won by the older and better known LM Four and Six. The HSM series give Hall-Scott speed and dependability with a rare degree of accessibility that simplifies maintenance.

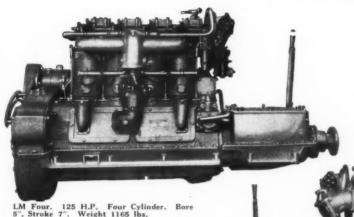
For ordinary upkeep attention, the whole cylinder head on the HSM models can be removed without disturbing even the manifolds. This makes valve grinding very easy. For valve mechanism adjustment, it is merely necessary to remove the valve cover. Connecting rod bearings can be taken up thru the large hand holes, and if required, the entire cylinder block can be removed as a unit.

Mr. Chas. E. Sorensen of the Ford Motor Co.
owns the Matthews "38" cruiser illustrated below.
This boat, the product of the Matthews Base Co.
Port Clinton, Ohio, has a Hall-Scott HSM 6 which
gives her a speed of 13 miles per hour.

owned by Mr. A. Hansen, New Rochelle
N.Y. T. A. Kyle Co., Inc., City Island,
are the designers and builders. The HallScott HSM 4 drives her at 12 miles per hour.



## Marine Engines



The proven dependability and unusual adaptability of the Hall-Scott marine engines are attested by their installation in many varied types of craft - ferry launches, that run all day and every day, cabin cruisers, ship tenders, large runabouts, speed runabouts and express cruisers.

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Hall-Scott engines embody all the refinement that you so much desire, enclosed moving parts, noiseless action, smooth running, plus a symmetrical and clean cut appearance.

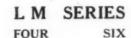
If you own a fine boat, or plan to build one, you should become acquainted with Hall-Scott engines and learn why many of America's finest runabouts and fastest cruisers owe their mechanical superiority to the Hall-Scott power plants.

Catalog and prices sent upon request

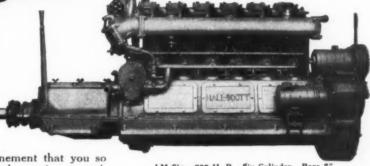
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Full pressure lubrication. Overhead Valve action. Five bearing overhead camshaft. aluminum alloy crankcase and nistons.



LM Six. 200 H. P. Six Cylinder. Bore 5", Stroke 7". Weight 1460 lbs.





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#### **PURDY BUILT**

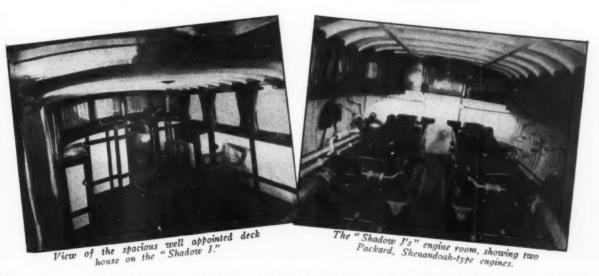
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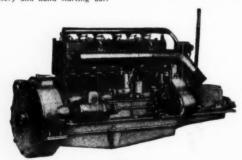
Model 1M-1237 Sweepstakes Type. 12 Cylinders. 400 H. P. Weight 1168 lbs. \$8,000

Designed originally for the Sweepstakes race, and famous all over the world for its wonderful showing, two entries finishing second and third without any mechanical trouble during the 150 mile grind.

For high class runabouts, racing boats and hydroplanes, it is, without doubt, the finest engine on the market. Develops speed up to 65 miles per hour.

Dependable and reliable as only Packard engines can be. Built of finest materials and designed for long life. Can be used either with a direct drive propeller or through a gear box. The ideal engine where maximum power requirements are desired with compactness and light weight.

Furnished with ignition, starting and lighting switch; electric starter; ammeter; oil gauge; tool kit; propeller shaft coupling; battery and hand starting bar.



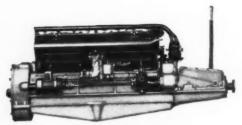
Model 1M-268 Single-Six, 45 H. P. Weight 625 lbs. \$1500

Specially designed for all round service in boats from 18 to 25 feet in length, and for larger auxiliaries. Brings to motor boat owners a degree of reliability and economy never before equalled. Equipped for salt water service. Right or left hand rotation—ideal for twin screw installation in cabin cruisers and fishing boats. Extremely flexible—can be throttled down to trolling speed.
Furnished with ignition and starting switch, oil gauge and ammeter; tool kit; battery; electric starter; hand starting bar; propeller shaft coupling.

shaft coupling.

Built to Packard standard of fineness; and showing extraordinary durability and economy.

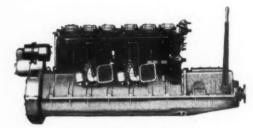
Simple in design and parts extremely accessible.



Model 1M-357 Straight Eight. 60 H. P. Weight 790 lbs. \$2,000

One of the most dependable and economical marine engines of its type and speed ever developed. Its straight-eight design makes it unusually compact and its parts extremely accessible. The ideal power plant for those requiring a speed of 20 to 30 miles an hour in boats 22 to 35 feet in length. Furnished in right or left hand rotation, and, therefore, can be used for twin screw installations in cabin cruisers from 35 to 40 feet in length. Very flexible and free from vibration, and meets the requirements of all types of service.

Furnished with ignition starting and lighting switch; oil gauge and ammeter; tool kit; battery; electric starter and hand start-ing bar; propeller shaft coupling.



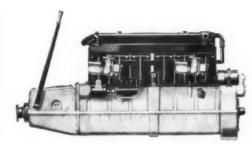
Model 1M-618 Famous Gold Cup Type. Six Cylinders. 200 H. P. Weight 900 Lbs. \$5,000

Twice winner of the Gold Cup Speed boat races, and without a doubt the finest engine in the motor boat field. Holds world's endurance record—1064 miles in 24 hours without mechanical adjustment. So compact that it is the finest installation possible in runabouts of 25 to 40 feet, with speed range up to 50 miles an hour. Especially adaptable, too, for light cabin cruisers and sedans either single or twin screw installation. No mechanical complication, all moving parts easily accessible and built of finest materials obtainable. True to the Packard traditions of reliability and durability. Furnished with ignition, starting and lighting switch; electric starter; ammeter; oil gauge; tool kit; propeller shaft coupling; battery and hand starting bar.



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Model 2M—1551
Six Cylinders. 275 H. P. Weight 1790 lbs.
\$10,000

Here is one of the greatest marine engines ever perfected.

It is an airplane type, modeled after the design of the world famous Packard airplane engines used in the giant dirigible Shenandoah (formerly the ZR-1.)

It is the last word in power plants for express cruisers. Furnished in right or left rotation for twin installation. Designed for salt water service. In compactness and accessibility of parts it is without an equal. Built to operate on commercial gasoline.

gasoline.

Any cylinder can be removed, valves inspected, bearings inspected and replaced in less than two hours, without disturbing any of the other manifold connections.

So finely built, and so practically designed that it is destined to win as great a place among yachtsmen as its airplane prototype holds among aeronautical men.

No express cruiser can hope for the first rank in power efficiency, reliability and economy without this great engine. Wherever motors are discussed for use on land, in the air, on the water, the name Packard is used synonymously with all that is finest and best in engine design and manufacture. Shown here are the five famous motors that uphold the Packard reputation in naval circles. Each type is rugged and enduring, possessing remarkable capabilities of speed and power and endurance. Whatever your boating tastes may be, there is a Packard marine motor designed and priced to meet them.

Bulletins giving detailed information about these engines, gladly sent on request.

Packard Motor Car

Detroit

Mich.

## MARINE ENGINES

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# Richardson

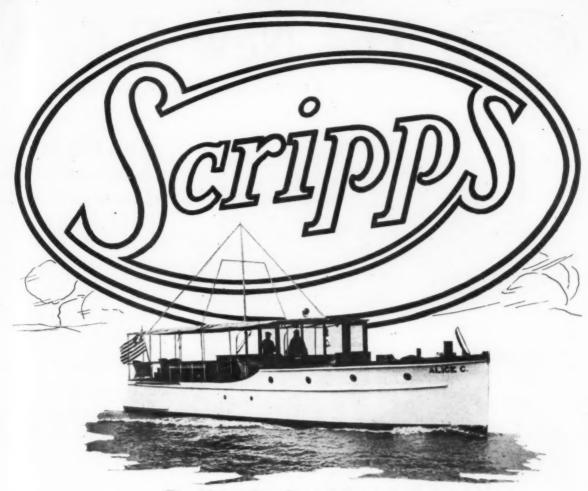
## The Choice of Men who know

Richardson boats immediately appeal to your sense of exclusiveness and individuality. No words can describe the beauty and distinctiveness of design—just as no words can describe their marvelous performance—their comfort or their economy of operation.

There are Richardson Runabouts and Cruisers of all types and sizes ready to select from or we will build to your design if you prefer.

#### RICHARDSON BOAT COMPANY

370 Sweeney Street
N. Tonawanda
N. Y.



The Motor that Crossed the Atlantic

#### A MOTOR FOR EVERY TYPE OF BOAT

SCRIPPS MOTORS command a high regard and respect in the boating industry, enjoying preeminent position comparable to none. Their value is conceded by manufacturers of every type of marine engine. The public expression of this esteem is found in the wide use of Scripps motors in the finest boats that come from the yards of the foremost boat builders. These tributes convince us that each Scripps model is the highest type marine engine in its class.



Scripps Motors are found on all types of boats up to 75 ft. in length—cruisers, runabouts, speedsters, auxiliaries and commercial boats in all kinds of service.

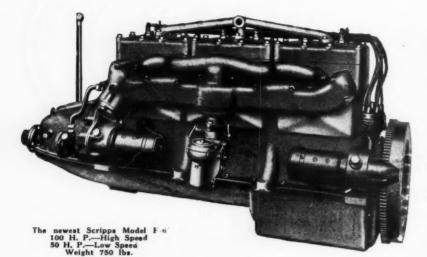
"Lady Helen," (speed 38 M.P.H.) the first boat to carry Model F.6, the newest Scripps, won the Junior Gold Cup race at the Detrois Regatta, August 1924. The Hacker Boat Company built "Lady Helen" for Mr. De Roy of Detroit, its owner.

SCRIPPS MOTOR CO., 5819 Lincoln Avenue, Detroit, Mich. When writing to advertisers please mention Motor Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York

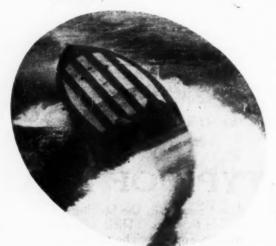


## The New F-6, A

Tried and Proven Economical-



A 100 H.P. Marine Motor that develops upward to 133 H.P. with a silky smooth flow of energy that is almost beyond comprehension. The remarkable power of the Scripps F-6 has been a revelation to all engineers who have examined and tested it.



SCRIPPS MOTOR CO.

The Miami special, 18 ft. one design class racer, designed and built by Purdy Boat Co., Trenton, Mich., making 42 miles per hour with the F-6.



Advertising Index will be found on page 304

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## Standard for 1925

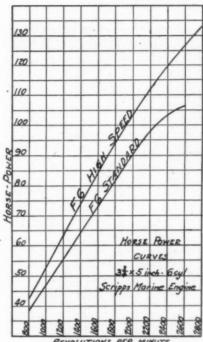
Scripps

Powerful - Reliable - Staunch

The Motor That Crossed the

I TS performance in controllability its wide range of speeds—its responsiveness and pickup are amazing.

Since the F-6 made its first appearance by easily winning the Junior Gold Cup Race of 1924 the sales of this model have exceeded our fondest predictions. However, it is not a mere racing engine; it is a sturdy and powerful motor suitable for cruisers and runabouts as well as speedsters. Price Complete, \$1250.00 F.O.B. Detroit.



REVOLUTIONS PER MINUTE
Power curves of the Scripps F-6 Marine
Engine

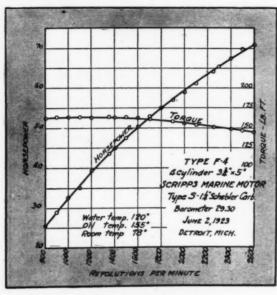
The Hacker Dolphin Standardized 26' Runabout built by the Hacker Boat Co., Detroit, powered with the Scripts F6, speeding at 31 miles per

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## F-4, The Standard of

The Motor Tha' Cross d the



Power curves of the Scripps F-4.

HERE is the most phenomenal success in marine engines, so much so as to be the yardstick by which all marine engine values are measured. The Scripps F-4 is a light weight compact clean-cut motor tremendously powerful with a speed range of 500 to 2600 R.P.M. The F-4 is a motor built for service and will withstand the abuse which some boatmen place in the category of service.

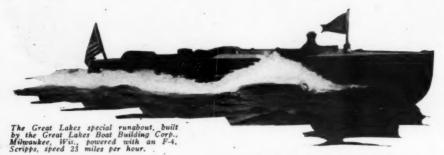
#### SCRIPPS MOTOR CO.



The Apel 21 ft. displacement racer, built by the Venture Boat Works, Venture Heights, Atlantic City, N. J. has a speed of 38 miles per hour. The F-4, high speed Scripps furnishes the power.



The 32 ft. Casey standard ized cruiser—a heavy 32' x 10' boat with double the displacement of the average 32 footer. The Casey Boat Building Co. New Bedford, Mass., are the builders. Power is furnished by an F-4, Scrippt.



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## Marine Engine Values



The Motor That Crossed t

Like other Scripps models the F-4 gives the ultra in quietness, smoothness, economy and flexibility.

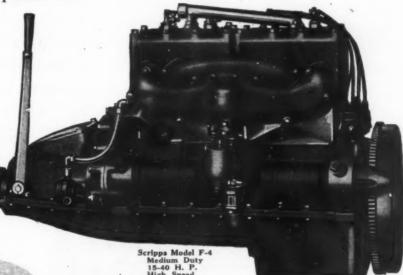
Prominent builders of standardized boats have adopted the F-4 as regular equipment because it offers the greatest value of any power plant of

its size and power rating. Price complete \$750.00 F.O.B. Detroit.



Richardson, standardised 25 ft. runabout designed and built by Richardson Boat Co., North Tonawanda, N. Y., speed with F-4, Scripps, 22 miles an hour.

5819 Lincoln Ave., Detroit, Mich.







riere is the 24' special standardized sen shiff built by G. T. Backus & Son in which the Scripps F-4 motor is used as standard equipment. Speed 20 M.P.H.

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The Motor That Crossed the Atlantic

## Unusually Adaptable

E-4



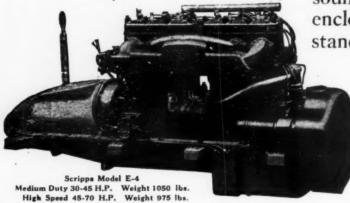
The Matthews Co., Port Clinton, Ohio, regularly equip their standardized 38 ft. cruisers with Model E-4, Scripps.

IF popularity counts for anything, the Scripps "E" series has long since been resting on its laurels. There have been more Scripps E-4 motors sold than any other motor over 30 H.P. Produced in two types, medium duty and high speed. there is a wide range for its use in either commercial, cruiser or runabout classes. This engine embodies all the Scripps principles of conservatism and particularism-no fads or frills, just sound engineering. It is an allenclosed motor with a high standard of quality in work-

manship and material.

Price complete \$1250.

F.O.B. Detroit



Stock model cabin sea skiff, built by Hoops-Wood Shippard, Inc., 38' long & 8' beam, equipped with E-6, Scripps.





Tescil, the sensation of Tamaqua Ocean Race. A standardized cruiser built by the Gordon Boat Building Co. of Brooklyn, N. Y., powered with E-6, Scripps.

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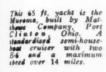
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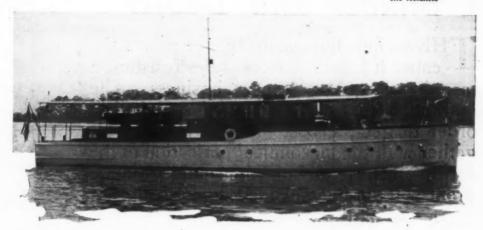
## Marine Engines

E-6



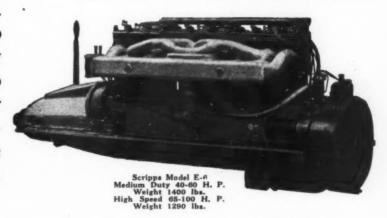
The Motor that Crossed the Atlantic





THE very excellence of design and construction of the Scripps E-6 commends its use on the finest of yachts. Its steady, smooth vibrationless power makes you unmindful of the machine

that is driving the boat. A single E-6 in boats up to 60 ft. or a twin screw installation in boats up to 75 ft. makes a power plant that leaves nothing to be desired. Price complete \$1750. F.O.B. Detroit.



A Los Angeles cruiser built for W. C. Warmington, by the Seacraft Corporation. She is 45 feet long and with a Scripps E-6 engine won a consistency race of 110 miles.

SCRIPPS MOTOR CO. 5819Lincoln Ave, Detroit, Mich.



"Inomar II," a 40 ft. express cruiser built of Honduras Mahonany and teak, owned by Mr. Henry Hoffer, Vancouver, B. C. Maximum speed over 15 miles per hour with a Scripps E-6 motor.



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## What the Scripps Line Means to the Boat Builder and Dealer

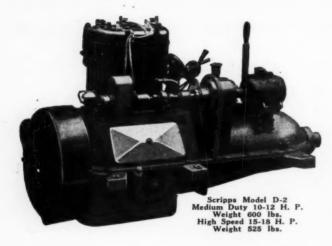
THE Scripps line means bigger profits because it has little or no sales resistance, meaning larger volume of business. The markets of the world have been searched in order to get the best materials. This, together with the mechanical perfection of the Scripps, means that your time and legitimate profit will not be expended in servicing.

Hook up with this line—write today for particulars.





This little 35 ft. cruiser "Detrois" blazed a new trail when she crossed the Atlantic in three weeks under her own power in 1912. A 2 cylinder Scripps constituted her power plant.



Little needs to be said about the Scripps D-2 for it's known wherever boating is indulged as the first gasoline engine to power a boat crossing the Atlantic. This epoch making achievement has proven to the world the soundness of Scripps engineering principles. The D-2 is designed to withstand hard usage and to last for years.

It is the preferred engine for fishermen, and is admirably suited for auxiliary work. Price complete \$650. F.O.B. Detroit.

Write today for detailed information of Scripps Marine Motors

## SCRIPPS MOTOR COMPANY

5819 Lincoln Ave.

Detroit, Mich.

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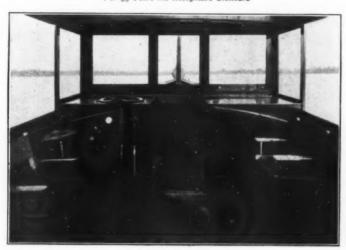
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## "GOLD MEDAL" FOLDING FURNITURE

For 33 Years the Recognized Standard



### As Comfortable "Aboard" as at Home

Nothing contributes more to the joy of cruising than comfortable chairs and beds. This "at home" comfort is built into every piece of Gold Medal Folding Furniture.

The new No. 35 Y yacht type Arm Chair has been developed to meet the conditions peculiar to Motor Boat use. Its handsome mahogany finish, khaki seat and back, and brass metal parts harmonize with the appointments of the finest cruisers. This model, like all No. 35 Chairs, is sturdy, steady on its feet and oh so comfortable. While large enough for a big man, it folds compactly to a space 261/4

in. by 16½ in. by 8 in. As all metal parts are brass it defies salt water. Many boat builders furnish them as standard equipment.

There is a "Gold Medal" chair, cot and table for every need—in the Home, Camp, Golf, Boat and Yacht clubs, and on boats of all kinds. Every piece bears the trade marked name—"Gold Medal"—the Recognized Standard for 33 years. Sold by reliable dealers everywhere. If you don't know the one nearest you, write for his name—also handsome illustrated catalog.

#### GOLD MEDAL CAMP FURNITURE MFG. CO.

1752 Packard Ave., Racine, Wisconsin

#### AT THE SHOW

No. 13 Improved Reil Top

Thoroughly seasoned hardwood Imitation leather top, Specia construction permits folding to 31 in. by 4 in. by 6 in. Furnished with strong duck con taining sack. Size open 31 in by 31 in. by 28½ in. high Weight 12 ibs.



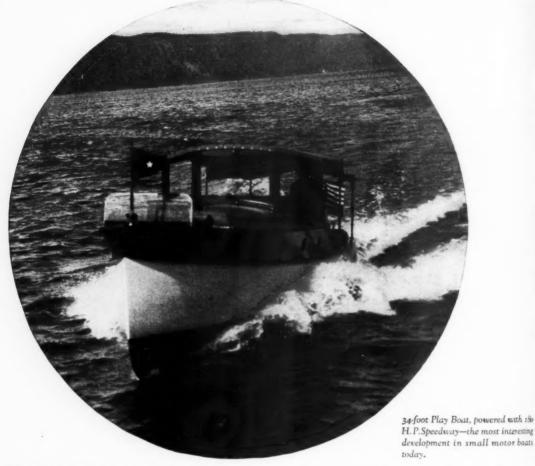
Frame of selected hardwood, cover of extra until 12 ox. (34 Inch) double filled specially woven, brown duck. Open 6 fr., 6 in long; 27 in, wide; 16% in, high. Folds t. 3 ft. 3 in, long by 4 in, by 6 in. Weigh



No. 35 Y Yacht

ideal for use on deck or below. Mahogany finish, khaki seat and back hardwood frame, all metal parts brass— Folds to 264x164ya. E. Weighs 1434 ibs.





# CONSOLIDATED—the largest boat building establishment in the world making complete pleasure boats

Two GENERATIONS of yachtsmen have turned to Consolidated for the highest expression of the boat builder's art. From yacht tender to deep sea yacht, the Consolidated product has ever been distinguished by a superb beauty of line, a rugged seaworthiness, a convenience of deck and cabin arrangement, and a perfect balance between engine and hull that makes the possession of a Consolidated Boat a source of unequaled satisfaction.

The special attention of sportsmen is directed to the Consolidated Play Boat, illustrated above and also bottom of facing page.

25

The power plant consists of a 6-cylinder 180 H. P. Speedway Engine—the engine selected by the United States Treasury Department to power the new U. S. Coast Guard speed boats. Speed: up to 23-24 miles per hour. No Speedway Engine has ever disclosed structural weakness or inefficiency.

Extremely seaworthy, simple to operate, and carefully designed for comfort and convenience, Consolidated Play Boats offer maximum service and pleasure with very low upkeep and a one man crew. Price, \$11,000. Immediate shipment from stock.



#### Exhibit at the 1925 Show

Blocks A2 and A3 at the New York Motor Boat Show will, as usual, contain a most interesting exhibit of Speedway Boats and Engines.

The Consolidated exhibit at this year's show includes: 34-foot Play Boat (description above); 35-foot V-bottom Runabout; 16foot Yacht Tender; and a Rowing Dinghy.

The well known Speedway Engines will also be on view, with models ranging from 75 to 300 H. P. Engineers in attendance will be pleased to advise interested yachtsmen concerning the performance of a Speedway model installed in any type of boat.

#### Permanent Exhibit

At the Consolidated Shipbuilding Corporation plant at Morris Heights, New York City—conveniently reached by train from Grand Central Station and also within easy run by motor cara most interesting exhibit of boats and engines can be inspected throughout the year.

> Descriptive Literature on any Consolidated Boat or Engine sent on request

#### CONSOLIDATED SHIPBUILDING CORP. NEW YORK CITY

MORRIS HEIGHTS

Runabouts

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Play Boats

Day Cruisers



North and South Cruisers House Boats Steel Yachts

Another view of the Play Boat-on view at the 1925 Motor Boat Show



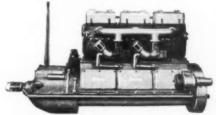
62-foot Consolidated Day Cruiser-atype of boat long associated with the name Consolidated



Consolidated North and South Cruiser, combining all year service, long cruising radius and the finest appointments.



s-foot Consolidated V-bottom Speed Runabout. The aft cockpit seats five or six, the forward cockpit two or three. On view at the Show.



180 H.P. Speedway Engine, Model MR, absolutely reliable for years of service. On view at the Show.



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CYPTESS
"The Wood Eternal"



Identify the genuine "WOOD ETERNAL"



Get it from your local lumber dealer. If he hasn't it, write us promptly. "Natural for boats as boats are for water."

With "Tidewater" Cypress you plank but once.

You miss all the fun of patching or replanking—but you save money.

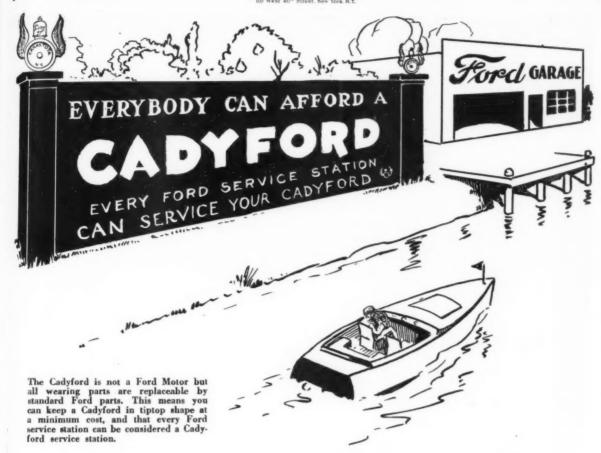
You can paint her for gaiety—or copper-sheath her against barnacles—but on a hull of true "Tidewater" Cypress ("The Wood Eternal") you need no paint to avert decay.

But be very sure you get genuine "Tidewater" Cypress, from old swamps within 200 miles of our South Atlantic or Gulf Coasts. Identify it by the Arrow trade mark shown below. That's insurance.

WRITE US YOUR EXPERIENCE. WE ARE HERE TO HELP.

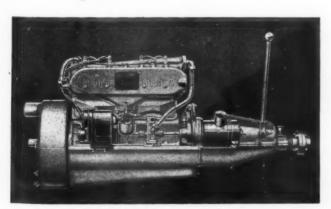
SOUTHERN CYPRESS MANUFACTURERS' ASSOCIATION

1317 Poydras Building, New Orleans, Louisiana or 1317 Graham Building, Jacksonville, Florida. 8



Your judgment in the selection of a marine engine is the "fork in the road" that leads to maximum boating pleasure or to unwarranted expense. If you want pleasure get a Cadyford—it's low in first cost—it's low in operating cost, and is one of the simplest and easiest motors to operate.

The Cadyford is a four-cylinder four cycle engine that gives the same superior advantages on water that the most popular automobile gives on land. Considering the quality and completeness of the Cadyford it is the lowest priced engine of its kind. It is built to give long hard efficient service. And, regardless of where you cruise to you will find Cadyford service stations. All parts that fit a Ford engine will fit the Cadyford,—no delays, no misfits. The constituent parts are the best and most carefully made that modern manufacturing methods and skilled mechanics can produce.



Cadyford open type, equipped with Atwater Kent, no reverse gear, \$280.00.

Cadyford special, completely enclosed high tension magneto, overhead valves, electric starter and reverse gear, \$600.00.

TWO CYCLE ENGINES =

We also build 2 cycle engines from 1½ to 8 H.P.—\$50 to \$170.

C. N. CADY CO., Inc.

304 A Center Street, Canastota, New York

Established 1883

Marine Engine Manufacturer

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Pioneer

# STERLING

#### Announcing

The Sterling Engine Company's Display at the National Motor Boat and Engine Show

Grand Central Palace

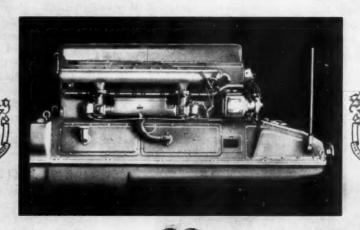
New York City

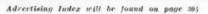
January 2nd to January 10th, 1925

The Sterling-Coast Guard, newest of the Sterling Models developed for the U. S. Government for off shore duty.

200 H. P. at 1200 R. P. M.

A wonderful achievement in engine design, efficiency and reliability.







NCLUDED in the exhibit will be Sterling engines from 12 to 300 horsepower. Incorporating refinements which the Sterling Engine Company have perfected from years of experience as internal combustion engine designers and manufacturers.

Engines on display will include the famous

Seagull

Coast Guard

Viking

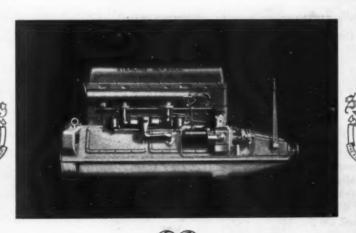
Dolphin

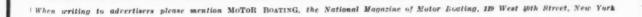
Neptune

Trident

Engine designs suitable for every type of boat

STERLING ENGINE COMPANY
1254 NIAGARA STREET
BUFFALO, N. Y. U. S. A.





# Here Son KIRBY'S PAINT is the BEST

#### **USE KIRBY PAINTS**

#### Anti-fouling Paints

Green and Red Composites Old Style Brown and Red Copper Paints

New Bedford Copper Bronze

Never Fouls-Never Fails

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(A Turpentine Paint)

Gloss Yacht White

(A Varnish Paint)

Marine Outside White

(A Linseed Oil Paint)

#### Deck and Interior Paints

Deck Paints—10 colors Imported Holland White Enamel Old Man Experience, Father Time, is the fellow we all look to for advice — and when it comes to advice about paint he has only one answer,

## "USE KIRBY'S"

Leading marine dealers carry a full line of Kirby's Paints for Motor Boats, Yachts and Boats of all kinds. If your dealer doesn't we will appreciate it if you will advise us.

#### GEORGE KIRBY Jr. PAINT CO.

Manufacturers of Marine Paint for More than Half a Century

New Bedford, Mass.

Established 1846

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## Belle Jule-Hacker Boats



#### New Features Found in Super Bearcat

Seven-passenger forward cockpit with upholstered sides.

Disappearing after cockpit and seat. Slanting, semi-octagonal windshield. Instrument board on cowl, under glass, with indirect illumination.

Adjustable ventilator in forward deck. Cast bronze, streamline running lights with louvre ventilators.

Streamline gasoline filler cap, cleats, lights and cowl.

All coamings eliminated.

Electrical gasoline feed.
Goodrich Cutless Rubber Strut Bearing. Rubber cushion between shaft log and stuffing box.

Flexible connection between engine and propeller shaft.

Two water tight bulkheads fore and aft of engine compartment.

And many more to be found by a personal inspection of the boat.

E take pleasure in announcing that the new Belle Isle Super Bearcat, first presented to the public at the New York Motor Boat Show, is available tor delivery for the Florida season.

This new model Bearcat is a distinct advance over the present Bearcat in many ways. Four feet longer and 6 inches wider, it is unquestionably a better sea boat than the 26 foot model. A larger forward cockpit, with greater seating capacity and more leg room, is one of the prominent new features. Other improvements are listed below:

The Belle Isle Super Bearcat inaugurates a new era in runabout construction. Four years' experience in the building of the standard Bearcat, plus a year of research and experimental work, have developed a boat entirely in a class by itself-a true Rolls Royce of

Advance sales, prior to its first public presentation at the New York Motor Boat Show, indicate that the coming season will find the Super Bearcat an even more popular boat at the prominent watering resorts of Florida, the East Coast and the Great Lakes than ever.

Photographs of the Super Bearcat, both in action and showing details of construction, will be gladly furnished after January fifth.

#### The Belle Isle-Hacker Boat Sales Company

6304 E. Jefferson Ave., Detroit, Michigan

Florida Distributors — R. Stuart Murray, Tampa; L. G. Mitchell, Miami; Gibbs Gas Engine Co., Jacksonville.

Eastern Representative — Wilbur H. Young, 522 Fifth Ave., New York City.

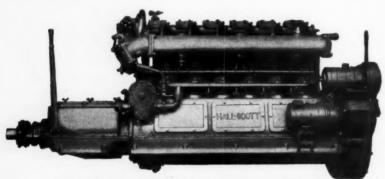
## Belle Jule-Hacker Boats



Super Bearcat Construction Features

Double planked bottom, copper riveted. All oak structural timbers, including engine stringers and deck carling. Mahogany planked throughout. Stained black walnut trim. Bronze plate inserted in hull over propeller. Bronze shaft, strut and rudder. Goodrich Cutless Rubber Strut Bearing. Direct steering mechanism, no ropes or pulleys. Watertight bulkheads forward and aft of engine room. Watertight hatches with grooved joints. Entire hull varnished inside and outside. Eight coats on exterior, rubbed to piano finish. Sixteen inch, triple spring seats. Best grade Dupont upholstery. Complete automobile control from driver's seat. Seventy-five gallon gasoline capacity. Salt water equipped throughout. All fittings nickel plated on bronze. One-piece instrument board under glass, indirectly illuminated, with the following: Motor-Meter; Tachometer; Oil Gauge; Ammeter.

Other instruments on Cowl: Ignition Switch; Ignition Lock; Primer.



The Hall-Scott L M-6. Six cylinders, 200 H.P. at 1750 R.P.M. Bore 5 in. Stroke 7 in. Weight 1395 lbs. complete. Equipped with gasoline priming system with dash pump, Delco 12 volt electric starting and dual ignition system, water temperature gauge, oil gauge and oil cooling tank.

#### The Hall-Scott LM-6

is the standard power plant of the new Super Bearcat

Following four years' successful use of Hall-Scott Marine Motors in the standard 26 ft. Bearcat, we have chosen their LM-6 model, delivering 200 H.P. at 1,750 R.P.M. as standard equipment for the Super Bearcat. Running tests assure us of 44 miles per hour under normal conditions, and we will give a written guarantee of 40 miles or more with each boat.

The LM-6 Model Hall-Scott is the outcome of a prolonged study in the marine engine field. It is designed for the one purpose—that of combining great strength with power. It can truthfully be said that no marine power plant of today is capable of the all around performance of this engine.

The LM-6 cannot be duplicated either for safe weight per horse power developed, or for fuel economy. These two factors were important considerations in our selection of this motor for use in our new model, for the reliability of a high duty motor depends largely upon the former, and the question of initial and future cost upon the latter.

The great strength of LM-6 construction permits the engine to maintain maximum revolutions for long periods of time.

#### **Specifications**

LENGTH, over all, 30 feet BEAM, 7 feet DRAFT, 23 inches SEATING CAPACITY, 10 people MOTOR EQUIPMENT, 6 cyl. Hall-Scott Marine Motor, 200 H.P. at 1 750 R P M GUARANTEED SPEED, 40 Miles

#### Equipment

Two fire extinguishers
Forward light with adjustable ventilator
Nickeled side running lights
Name Burgee and Staff
Sireno electric horn
Mahogany paddle
Mahogany boat hook
Mahogany staff and after light
Yacht Ensign
White cotton tie lines
Four fenders Four fenders
Five block cork life preservers
Anchor and anchor line
Complement of tools, oil cans, etc.
Two sets of pilot cules Bilge pump
Name in gold leaf on bows and stern
Shipping cradle and cover

The present 26 ft. standard Bearcat will be The present 26 ft, standard Bearcat will be continued throughout the coming season to fill the requirements of those purchasers who either prefer a smaller boat, or desire to use it as a yacht tender, where overall length is a deciding factor.

#### The Belle Isle-Hacker Boat Sales Company

6304 E. Jefferson Ave., Detroit, Michigan

Florida Distributors - R. Stuart Murray, Tampa; L. G. Mitchell, Miami; Gibbs Gas Engine Co., Jacksonville. Eastern Representative - Wilbur H. Young, 522 Fifth Ave., New York City.

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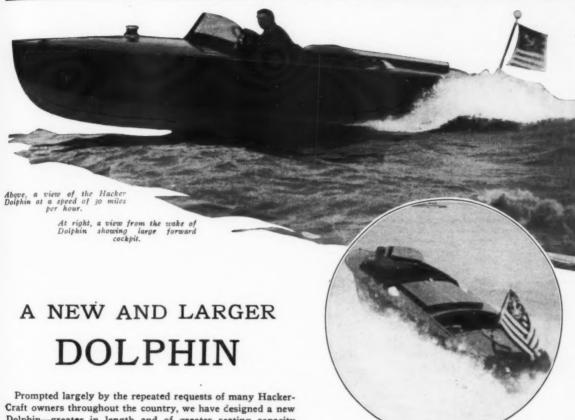
eople

Cyl. H.P.

Miles

or

## Belle Jule-Hacker Boats



Dolphin-greater in length and of greater seating capacity than the popular 24 ft. Dolphin of 1924.

This new model is 25 ft. 10 in. overall and 6 ft. 6 in. in width, with a large roomy, forward cockpit, comfortably accommodating seven passengers and entirely upholstered throughout.

Built from Hacker designs, under Hacker supervision, and with characteristic Hacker strength and thoroughness, the new Dolphin offers the greatest value in the medium price runabout field today.

Advance sales both to dealers and individual customers have been even beyond our expectations. The new features of this latest Dolphin, plus the time-proven qualities of the present Dolphin, promise to make this boat even more popular, and its use more wide-spread than any model we have built

Equipped with the Scripps Model F-6 cylinder, 90 H.P. motor, the new Dolphin is capable of a speed of

#### 30 miles per hour

Complete description and illustrated literature sent upon request. Delivery for the Florida season can be promised if orders are received early.

#### New features found in 1925 Dolphin

Greater length and beam.

Larger forward cockpit with comfortable accommodations for seven, and with increased leg room. New type wind shield, to which automobile type top can be attached if desired.

Box spring cushions with Mustang upholstery. Three passenger after cockpit, with removable wicker settee, making space available for extra luggage or for fishing.

Electric gasoline feed, eliminating both vacuum tank and air pressure complexities.

Goodrich Cutless Rubber Strut Bearing, eliminating vibration in after cockpit.

Bronze shaft wheel strut and rudder.

Complete salt water equipment.

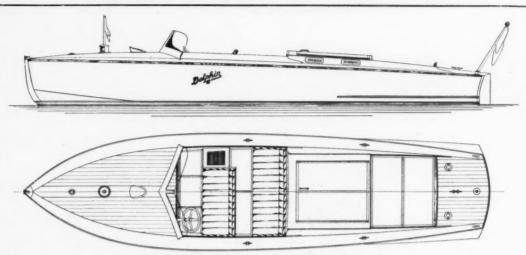
#### The Belle Isle-Hacker Boat Sales Company

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## Belle Osle-Hacker Boats



#### Construction Features of 1925 Dolphin

DECK, side planking, transom, and seats all of mahogany, natural finish.

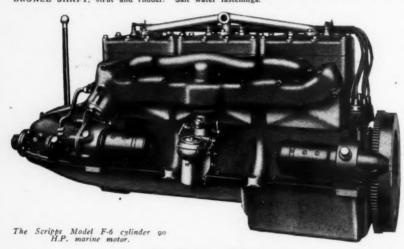
INTERIOR TRIM—upholstered throughout.

BOTTOM, double planked and copper riveted.

FLOORING, removable sections, metal bound, linoleum covered.

AUTOMOBILE STEERING COLUMN worm and sector type, direct connected to tiller. Complete automobile control.

BRONZE SHAFT, strut and rudder. Salt water fastenings.



#### The Scripps Model F-6

is the standard power plant of the new Hacker Dolphins

The performance of the Model F-6 cylinder Scripps motor in the 1924 Dolphin during the past few months has prompted us to adopt this model as our standard power equipment for the new 1925 Dolphin.

Scripps F-6 Specifications

Scripps F-6 Specifications

MOTOR—6-cylinder, 4-cycle, bore 334", stroke 5".

WEIGHT—750 pounds fully equipped.
POWER DEVELOPED—1,200 R.P.M., 55 H.P.—1,400 R.P.M., 65 H.P.—1,600 R.P.M.,
73 H.P.—1,800 R.P.M., 81 H.P.—2,000 R.P.M., 90 H.P.—2,200 R.P.M., 98 H.P..
CRANKSHAFT—2½" diameter (Drop forged, ground, with patented counterweights.)
CONNECTING ROD BEARINGS—23/16" diameter.
PISTON PIN BEARINGS—Bronze, interchangeable—1½".
PISTON PIN—1½" diameter.
EXHAUST PIPE—3" steel or copper tubing.
IGNITION—Distributor, standard.
SELF-STARTER—Electric—two unit.
LUBRICATION—Automatic, pressure through drilled crankshalt.

#### **Specifications**

LENGTH, overall, 25 feet, 10 inches.
BEAM, 6 feet, 6 inches.
CEATING CAPACITY, 10 people.
DRAFT, 22 inches.
POWER PLANT — Scripp
Model F-6 cyl. 90 H.P. motor.
SPEED—30 miles per hour. - Scripps

#### Equipment

One fire extinguisher. Combination forward light. Name Burgee and Staff. Klaxon electric horn. Mahogany staff and after light. Yacht Ensign. Mooring lines. Four fenders.
Block cork life preservers.
Anchor and anchor line.
Complement of tools, oil cans, etc. Two sets of pilot rules. Bilge pump.
Name in gold leaf on bows and stern.

#### The Belle Isle-Hacker Boat Sales Company

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#### **NIAGARA MOTORS for 1925**

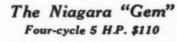
Four-Cylinder Four-cycle 9 to 15-H.P.

WRITE FOR CATALOG-

The Niagara "Special" for Boats 18 to 30 Ft.

\$227 to \$288

POWER! While light in weight this motor is the most powerful in her class. Complete in every detail. Easy to handle and dependability not surpassed at any price. Write for the "Special" folder.



STURDY! The huskiest little motor of its size built. Made in our own factory and by one of the oldest manufacturers of high-grade marine engines. A Motor With Ford Parts-Pistons, Main Bearings, Connecting rods, Gears, etc. Not a made-over engine, but especially designed for marine use. Complete! Ready to run. Write for details.



Medium duty, Four cycle

One, two, four and six cylinders; 5 H.P. to 100 H.P.

But be sure and tell us the power you are interested in and the size of your hull. Boat Builders, Dealers and Agents-A popular motor is always the best seller-Niagara's are popular. Write today for full particulars.

#### CORPORATION **MOTORS** NIAGARA

New York Agent: Sexton Motor Company, Inc., 149 Washington St., New York City

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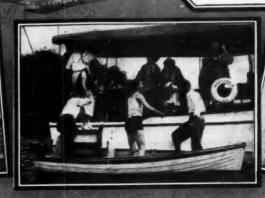




HE importance and far-THE importance and reaching benefits of Johnson's engineering achieve-ments are constantly reflected in the completely dependable performance of Johnson Mo-tors in the hands of thousands of enthusiastic users.

The wide range of useful-ness of Johnson Motors, and the exacting service demanded by their owners are shown by the fact that Johnson Motors are used to propel such boats as:

Rowboats of every size and de-scription.
Cances (up to 35 foot "war cances").
Sailboats (even up to 30 and 35 feet in length).
Outboard Motor Cruisers capable of long runs in heavy seas. (See illustration at left).







he Johnson Twin for 1925 with 30% MORE POWER

and Johnson Shock-Absorber Drive

NCHANGED in general design, the Johnson Motor for 1925 in addition to these two wonderful improvements seeses all of the following unmatched Johnson features:

Johnson Exclusive Universal Steering and Revers-

g Device lohnson Automatic Tilting Device lohnson Float-Feed Carburstor (with choice for sy starting) Iohnson Quick-Action Magneto

#### Weight Remains 35 Pounds

In 1920, L. J. Johnson produced the first the

He saw what was the matter with the crude outboard otors of earlier days. He applied true marine engineer-g principles to the outboard motor idea and achieved a pe of performance never before approached.

Perhaps the most remarkable thing about his achievement is that he not only produced a completely dependence motor with undreamed of power, flexibility and laptability, but he also produced a truly portable motor weighing, complete, only 35 pounds.

And now—he has succeeded in increasing the already markable power of the Johnson Motor by more than 30%. In four years the Johnson Motor has assumed a companding position in its field—in 1924, dealers cold more phase of Motors than any three other makes.

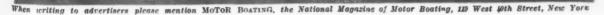
See the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the new Johnson at the Motor Best Show Grant Contract of the Johnson Motor Best Show Grant Contract Office Contract of the Johnson Motor Best Show Grant Contract Office Contract of the Johnson Motor Best Show Grant Contract Office Contract O

See the new Johnson at the Motor Boat Show, Grand Central Palace, New York City, January 2nd to 10th, or write for your copy of the Johnson catalog.

JOHNSON MOTOR COMPANY 860 Sample Street, South Bend, Ind. a Distributor and Export: New York Johnson Masse C









of ALL BOATS
for OUTBOARD MOTOR USE

(Main factory) PESHTIGO, WIS.



(Eastern factory) CORTLAND, N.Y.

THOMPSON Boat will add greatly to the satisfaction you get from any Outboard Motor. The extra speed you can get will surprise you. For example, at the Detroit Gold Cup Races, Thompson Boats

#### Won First, Second and Third Places

and broke the world's record for the distance run. Again, at the Big Oshkosh Races, July 3, 4 and 5, Thompson Boats won—coming in over half a mile ahead of the next fastest boat. They did the same at Wilmington, N. C., New Orleans, La., Houston, Texas, and in numerous other races of minor importance all over America.

So, whether you want a Rowboat, a Canoe, or an Outboard Motor Boat, remember, there is no boat so fast as a Thompson. They are the easiest to row by hand, and the fastest to run by motor. Four other models for Outboard Motors; specially designed for shallow water, river, lake or ocean use.

#### 20 Other Popular Models of Boats and Canoes



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World's fastest practical runabout

MR. CALEB BRAGG Famous American Sportsman, New York

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## Why Don't You Get Aboard a BABY GAR Too?

GAR WOOD, Inc.

409 Connecticut Ave.

Detroit, Mich.

For Complete information and demonstration write, wire or telephone

Howard W. Lyon

725 East 135th Street

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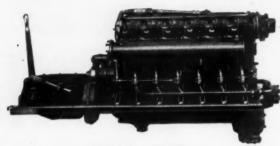
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Be sure to see our exhibit at the Motor Boat Show.



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## GAR WOOD MARINE ENGINES

America's Most Famous Power Plant for Cruisers. Runabouts and Speed Boats

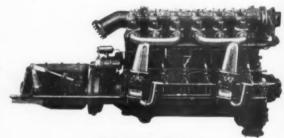


Model T-25 - 400 H.P.

DROGRESSIVE yachtsmen are demanding this type marine engine, giving greater flexibility, less vibration and higher power without excessive engine speed.

Note clean cut, sturdy construction. Engine and reverse gear single unit on angle iron ready for installing in boat. The marvelous achievement of the power plant, not only in speed boats but also in cruisers as large as 75 feet, stamp it as the best for new boats and for bettering performance of craft now in service.

Like the Detroit Marine Aero Engine the water jackets are plated with tin alloy, by a newly perfected process which makes the cylinders immune to salt water corrosion or rust. This gives a durable and dependable cylinder that is fully guaranteed for service.



Model TS-25 -- 500 H.P.

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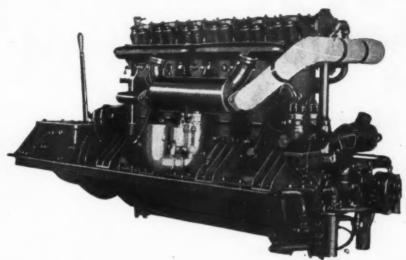
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## Detroit Marine-Aero Engine

New Model Dual Carburetion



rs,



300 H.P. at 1650 R.P.M.

UNEXCELLED in quality of design and workmanship, and in perfect adaptability for marine service, whether in runabouts, racing craft or express cruisers.

Cylinders Protected Against Salt Water Corrosion and Rust

We have perfected a new process of tin alloy plating the water-jackets so that the cylinders are unaffected by salt water corrosion or rust. This give a durable and dependable cylinder that is fully guaranteed for service. Used exclusively on Detroit Marine-Aero 300 H. P. (Fiat type) and Gar Wood Liberty 450 H. P. Marine Engine.

Write for Literature and Prices

#### DETROIT MARINE-AERO ENGINE CO.

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149 Washington Street,

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It Pumps
All Right
But Consider
the Work
and the Mess

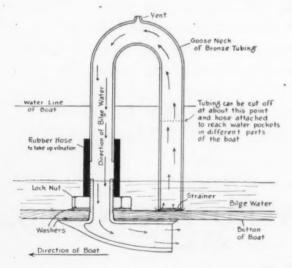
Drive with



Gardfood

#### **BILGE BAILER**

It's Working All the Time the Boat Runs, When There's Water in the Bilge and Doesn't Cost a Penny to Run



#### Salient Features of Gar Wood Bailer

No Valves to Work
Cannot Leak
Nothing to Remember to Close
Will Not Syphon Back Into Your Boat
Absolutely Automatic
Works at All Speeds
Equally Adapted for V or Round Bottom Boats
Used by Gar Wood on All His Boats
Guaranteed by Gar Wood
Sold at a Price Within the Reach of All
Purchase Through Your Boat Builder or Dealer
or Buy Direct
Guaranteed to Increase Speed of Boat
Does Not Affect Boat's Seaworthiness

Patent applied for

Fine proposition to offer dealers — Write for details

Price \$20.00 plus carrying charges.

Order yours to-day.

See the Gar Wood Bailer at the Motor Boat Show



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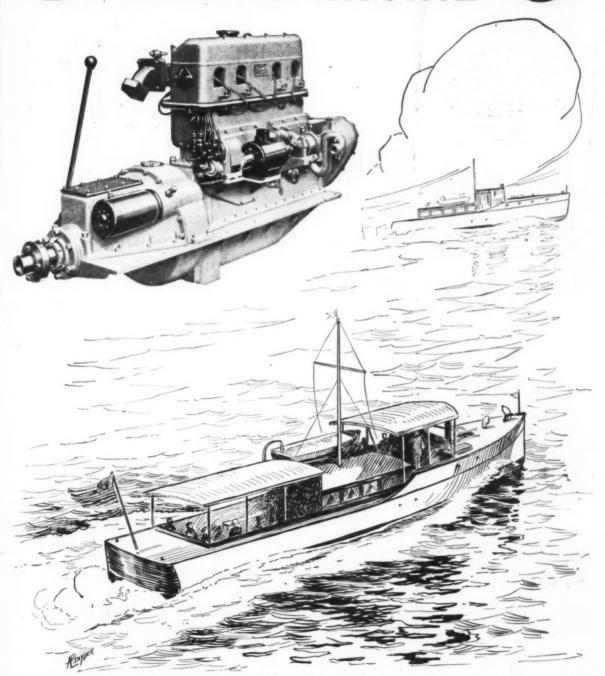
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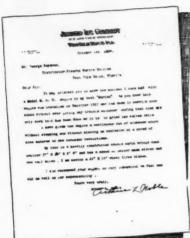
## SEXTRA RESERVE TEARN MARINE ENGINE



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# STEARNS EXTRA



This unsolicited letter tells the story of the good boat Marion and her Stearns MHU en-





J. F. Donahue of Boston owns the "Seremanda" a 41 foot auxiliary powered with a model MDU Stearns engine.



A pair of Stearns model MDR engines make up the power plant of Mr. Harry Mazo's 40 ft, cruiser "Malmo," and give her a speed of better than 26 miles per hour.

N OTHING shows the adaptability of an engine, its fitness and stamina more conclusively than the boats it powers. It is hard, we might say impossible, to name any type boat

from 14 to 75 feet in length which is not successfully powered with a Stearns Extra Reserve Marine Engine.

This and the following pages portray many boats, but an infinitesimal few of the many that are powered with one of the four Stearns models.



"Aafje" is the 58 ft. schooner yacht of Mr. C. F. Hubbell, Des Moines, built at the yards of the Blanchard Boat Co., Seattle, Washington. The model MDU Stearns drives her at 8 miles per hour.

Advertising Index will be found on page 304

THE "Extra Reserve" in the I name of Stearns engines is not meaningless. It means that each and every Stearns gives over and above its guaranteed rated horsepower. Stearns engines have all the inherent qualities necessary for reliability and en-

durance in the hardest service to which internal combustion engines can be put.

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To the boating world the Stearns manufacturing facilities have given great advantages in economy and efficiency procured by modern multiple production without sacrificing quality or workmanship.

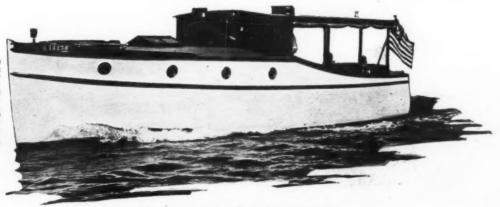


This is a 26 ft. runabout built by the Liggett Boat Co., Wyan-dotte, Mich., cutting capers at the rate of 30 miles an hour. A Stearns MHR supplies the power.



"Stella," a 67 ft. auxiliary yacht built by Geo. Lawley & Son Corp., Neponset, Mass. The Stearns model MDU engine gives her a speed of 71/3 miles

"Bobdick II", a 30 by 8'9" raised deck cruiser owned by Mr. R. H. Greten, Hoboken, N. J. and built by Dawn Boat & Shipbuilding Corp. The "Bobdick" is powered with model MHU Stearns which gives her a speed of 14 miles per hour,



Advertising Index will be found on page 304





"Lotte II" is a 61 foot steel constructed yacht built in Germany and owned by Mr. Lee Shubert, New York. Stearns model MDU engine gives her a speed of  $10^{1/2}$  miles.



"Glad", a 32 footer is a Great Lakes semi V-bottom runabout owned by Mr. W. H. Noll. Ft. Wayne, Ind. Speed 27 miles per hour with model MDR Stearns engine



"Snug" a 26x7 4" tender for house boat of same name owned by Mr. Arthur Block, Philadelphia. Edward Fell Jardine, Atlantic City, N. J. is the builder. A Stearns MDR gives "Snug" a speed of 24 miles an hour although the guaranteed speed is only 22 miles.

THERE are very few marine engine man. ufacturers producing more than 10% as many engines built by the Stearns Motor Manufacturing Co., in a year. One statement is sufficient as an explanation for this vast difference in output. Stearns builds the lowest priced high quality engine on the market. Boat Builders, naval architects and yachtsmen know it; for they buy more Stearns engines than any other make.

Stearns engines are often selected to repower an old hull and they never fail to give more speed and at a lower operating cost than the original power plant.



"Shadow, a roomy passenger launch, owned by Mr. J. H. Cook, Lake Hopatcong, N. J., powered with a Stearns model MDR engine, has a speed of 24 miles an hour.

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EVERY part of the Stearns Extra Reserve Marine Engine is manufactured to a standard which some critical engineers would call excessive. Only the highest grade materials are used and each part is microscopically tooled to unusually fine measure.

tput. Stearns adaptability is not confined to the marine field. You will find Stearns engines in locomotives, heavy duty tractors, automatic shovels and acting as industrial power units, a service which is by far more severe than marine.



Britt Bros., West Lynn, Mass. are the builders of "Joann" an auxiliary schooner owned by Mr. Waldo H. Brown of Boston. Power furnished by a Stearns model MDU gives her a speed of 8½ miles per hour. Mr. Brown is very much enthused over the performance of the Stearns power plant and expresses his enthusiasm in the letter reproduced above.





Mr. F. W. Stevens of Toledo, Oregon, is the owner of this 33 ft. fast sedan runahout "Go Get Em" built by the Lake Union Dry Dock and Machine Works, Seattle, Washington. A Stearns model MDR drives the "Go Get Em" at more than 25 miles per hour.

"Marylin II", a 36' x9' cruiseabout built by Robert Jacob for Mr. Frederick Pope, President of the Ammonia Corp., New York City. "Marylin II" is powered with model MDU Stearns engine.

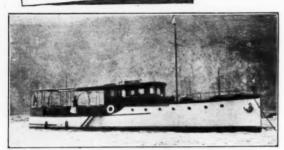
Advertising Index will be found on page 304







Mr. H. I. Windsor, owner of this 26' x 71/2' cruiser, expresses appreciation of Stearns efficiency forcefully in the letter reproduced at the left. The Stearns model MHU gives the boat a speed of 10 miles per hour.



"Patricia," a very heavily constructed cruiser 65' x 14', owned by Mr. R. J. Cope, Los Angeles, Calif. Patricia develops a speed over 11 miles per hour with her twin installation of Model MDU Stearns engines.

WO models of the Stearns Extra Reserve Marine Engines are high speed types built especially for racing boats, speedsters and runabouts. Their design is characteristic of speed throughout — aluminum crankcase, oil base pan and re- and verse gear housing, light weight pistons, special valve timing,

high compression and high pressure lubrication are but a few of the features. Although light in weight they have the same sturdy oversize working parts as the Stearns medium duty models.

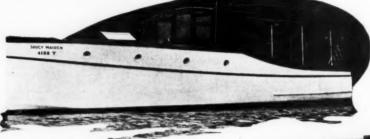
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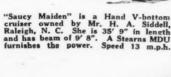
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Here's a handsome 35' limou-sine built by Mr. T. T. Young-felt of Chicago. Model MDR Stearns engine gives her a speed of 21 miles per hour.



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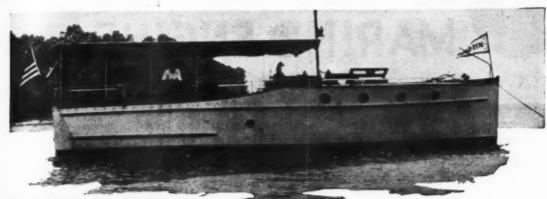
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## RESERVE MARINE ENGINES



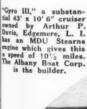
"Bess Emily," 42' x 10', raised deck cruiser owned by F. W. Hurlburt, Green Bay, Wis., makes 12 miles an hour with its Stearns model MDU marine engine.

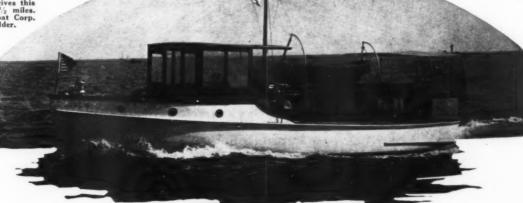
THE Stearns high speed engines are designed to give steady and continuous power at 1600 to 1800 revolutions per minute. You can run them under full load 24 hours a day and they won't falter—they are built for gruelling service and stand it. The mechanism is so finely balanced that there is a complete absence of vibration.

Each Stearns engine when first assembled is run on a Sprague electric dynamometer for several hours under full speed. Before shipping it is run again on a special marine test stand having an angle of 11° where the engine passes the final test under actual operating conditions.

Even in South America Stearns engines are popular. Señor Sie-burger Hermanos, Buenos Aires, is the happy owner of this 26 ft. runabout powered with a Milk mode Stearns.

Julius Peterson, Nyack, New York, built the "Helvetia Hil" for Mr. C. O'Donnell Iselin, New Rochelle, New York, after designs by Tams & King, Helvetia is an express cruiser, 30' 6" x 8", powered with model MDR Stearns and has a a speed of 25 miles per hour.





## SEXTRA RESERVE SEXTRA RESERVE MARINE ENGINE

YOU'LL like the Stearns, its business-like clean cut appearance, its excellent service qualities and low cost.

A Stearns in your boat gives you not only unfailing power but a new sense of pleasure. And you can be assured that this unfailing power

A beautiful 39 auxillary schooner owned by Mr. H. D. Bixby, Huntington, L. I., and designed by C. D. Mower. She does 9½ miles an hour with a Stearns model MHU engine.

will endure many years to come because every part is oversize with extra strength and the positive pressure system of lubrication minimizes wear.

#### MODELS AND PRICES

#### Medium Duty

MHU  $4\frac{1}{2}$  x 6" 25-50 H. P. at 500-1200 L. P. M. Weight 1050 lbs. \$8900 MDU  $5\frac{1}{8}$  x  $6\frac{1}{2}$ " 35-70 H. P. at 500-1200 R. P. M. Weight 1750 lbs. \$13900

#### High Speed

MHR \$\\ \frac{1}{2} \times 6'' \quad 80' \quad \text{H. P.} \quad \text{Weight 900 lbs. \$1090.00} \quad \text{MDR 51}\\ \frac{5}{2} \times 61\\ \frac{1}{2}'' \quad 125 \quad \text{H. P.} \quad \text{Weight 1300 lbs. \$1550.00} \quad \text{Weight 1300 lbs. } \quad \text{\$1550.00} \quad \quad \text{\$1550.00} \quad \quad \text{\$1550.00} \quad \quad \quad \text{\$1550.00} \quad \quad \quad \text{\$1550.00} \quad \quad \text{\$1550.00} \quad \quad \quad \quad \text{\$1550.00} \quad \quad



Mr. Paul J. Krait's 33 ft. limousine runabout is ever speeding up and down the Detroit River demonstrating Stearns engines. It is a 33 footer and makes 22 miles, an hour with Stearns model MDR.



STEARNS MOTOR MANUFACTURING CO. Ludington, Mich.

Agents and Dealers in principal marine centers U. S. A. and foreign countries

Advertising Index will be found on page 304

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ONE might rightly call the United States Coast Guard Patrol Boats little ships, for these boats are certainly more completely equipped than other boats of their size. The duty the patrol boats are intended for makes this a necessity. A crew of more than half a dozen must be accommodated for weeks at a time, on the high seas, yet the boats must be small, compact, easy to handle and fast enough to cover their respective districts in record time.



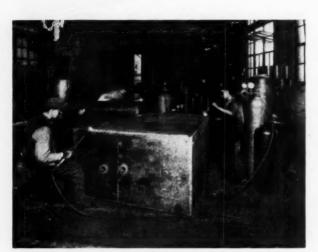
One of the 500 Gallon Tanks built by L. O. Koven & Bro. Inc., for the United States Coast Guard.

When the government naval architects completed the designs for these boats the plans looked impressive, and so do the boats built therefrom. An inspection of the equipment of the Coast Guard boats is like reviewing the products of "Who's Who" of the country's leading manufacturers.

In the engine room for example are two 500 gallon gasoline tanks, the product of L. O. Koven & Brother, Inc., the world's largest tank manufacturer catering to the motor boat trade.

## Why KOVEN TANKS

K OVEN TANKS are superior; because they are built of the finest materials available. They are built for



Workmen welding seams of tanks being built at the L. O. Koven & Bro. Inc., plant for United States Coast Guard

permanence. The metal used in the gasoline tanks of the U. S. Coast Guard boats is Armco iron.

Koven tanks are manufactured of the finest materials. This widely known trade mark appears on every sheet of metal used in the Coast Guard Tanks.

The word Armco imposed upon a triangle is a trademark known throughout the civilized world as a symbol of permanence for the product bearing it.

Large quantities of this sheet metal were required to meet government specifications. The metal after being cut to template is bent in power

brakes. Flanged baffles are then accurately fitted to all four sides of the tanks before being securely attached by means of acetylene gas welding. All seams in the tank are welded, the weld being of the same thickness as the metal. Thus giving the seams the same strength as the metal itself.

At completion of tanks the location of threaded outlets is carefully determined and drop forged flanges are welded to the plates of the tanks which are then accurately tapped with perfect pipe threads.



Standard Koven Gasoline Tanks-Galvanized. All sizes carried in stock up to 250 gallons.





Workman threading flanges welded to tanks for Coast Guard

Advertising Index will be found on page 304

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## Are Superior

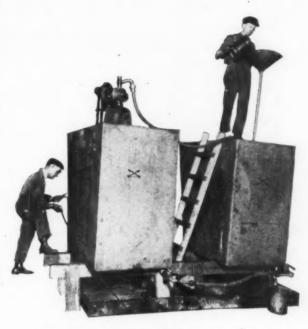
Testing is an exacting operation in the Koven shops. Although only the best materials are used and expert metal workers employed, it is never taken for granted that a tank is leak-proof. This must be proven by severe tests. The Coast Guard tanks were tested with air and kerosene under four foot head for four hours.

After tests prove the tank is absolutely leak-proof it is carefully crated and shipped to the builders of the Coast Guard boats. Two 500 gallon tanks are installed in the engine room of each boat. One tank on the starboard side and the other on the port side.

The Coast Guard tanks are not of a very unusual shape, but the quantity ordered was large. In addition to 156 five hundred gallon gasoline tanks, L. O. Koven & Bro., Inc., are also building 190 water, oil and kerosene tanks for the Coast Guard fleet. It's a big job and a limited time is given in which to finish the entire contract. Koven facilities, together with the resourcefulness of Koven engineers, are meeting delivery dates in advance of specified time.



Special air pressure tanks built for U. S. Torpedo Boat Destroyers.



Tanks shown here are being given the air and Kerosene test.



The engine room of the Coast Guard boats showing one of the 500 gallon Koven built gasoline tanks.

When writing to advertisers please mention MoToR Boating, the National Magazine of Motor Boating, 119 West 10th Street, New York

## No Tank too Intricate for KOVEN to Build



Above is one of over 200 tanks built by Koven for United States Government. These tanks were standard equipment on the 110' Submarine Chasers of U.S. Navy

DESIGNING and building tanks in any shape and capacity is the principal work of the big Koven plant. Here tanks are fabricated in every peculiar shape to save valuable space and increase capacity. And, bigger capacity gives greater cruising radius. Let our engineers increase your cruising radius. Send us the plans of your boat and tell us the capacity of the tank you want. Our engineers will sub-

mit to you designs for tank of desired capacity that will take up no more floor area than your present tank.

We carry a large supply of standardized tanks in stock for immediate shipment. Special orders are executed in galvanized iron or steel, monel metal or copper.



Special fuel oil

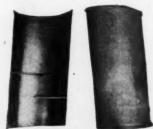
Boat Tanks
Fuel Tanks
Water Tanks
Air Pressure Tanks
Spray Tanks
Galvanizing for the Trade

Special Work
Rudders
Ventilating Stacks
Oily Waste Cans
Marking Buoys
Exhaust Manifolds

Write today for Marine Catalog

#### L. O. KOVEN & BROTHER, Inc.

Largest Tank Manufacturers Catering to Motor Boat Trade
154 Ogden Avenue, Jersey City, New Jersey



Exterior and interior of ven-



Air whistle tank



Special fuel tank oil storage

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3037 N. Western Ave.



Chicago, Ill.

#### PORT LIGHTS Polished Cast Bronze

The Erico improved type inside port light is designed with a copper screen as an integral part of the port light. These ports can be opened and closed without removing the screen. The screen is firmly held in the body of the port light from the inside with four brass machine screws, and is removeable. Each port light furnished complete with screen and outside finishing ring. All exposed parts smoothly finished and highly polished without the usual rough spots around lugs and hinges. The 6" size is made with one clamp; larger sizes have two clamps. In ordering specify exact length of sleeve required.

Diameter	
opening	
6 in.	
8 in.	

Length of sleeve 1¾ in. or less

Length of sleeve 2 to 21/2 in.

#### Length of aloeve 3 in.

Length of sleeve 4. in. \$13.20 18.70 33.00

Intake & Exhaust Pipe Connections



PLAIN BRASS

	Size
Stock No.	Pipe
6011	36
6012	34
6013	1
6014	136

Price

Stock No.

Stock No. 6020 6021 6022

High Speed Intake Strainer

#### PLAIN BRASS

Tank Cap and Flange

Price Stock No. 6023 6024 6025

Price

**Intake Strainer** 



PLAIN BRASS

Stock No. 6026 6027 6028

Price

Stock No.

Width Overall 634 in.

POLISHED BRONZE Weight Per Set 134 Iba

6040

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HUBBARD H. ERICKSON & CO. 3037 N. Western Ave., Chicago, III.

When writing to advertisers please mention Motor Boating, the National Magazine of Motor Boating, 129 West 40th Street, New York



#### BRICO Marine Specialties:

# Pubbuto T. Frickton & Oo., Door T. Frickton & Oo., Doo

#### Mooring Bitt With Flagstaff Socket



Used on small runabouts and tenders. Socket is straight for bow flagstaff.

D	mensions
	of base
4	1/v41// in -

Extreme height Weight 2½ lbs.

Polished Bronze Stock No. Price 1913 \$4,50

#### Mooring Bitt



The highly polished cast bronze fitting, in addition to its usefulness, has an ornate quality which will add to the appearance of any boat.

res	mon	sions	
	of be		
	114 M		
	-72		

Extreme height 3½ in. 5 in. 6½ in. 8½ in. Weight 2½ lbs. 7 lbs. 8½ lbs. 17½ lbs.

Polished bronze Stock No. Price 1908 \$3.65 1909 7.50 1910 10.00 1911 18.00

#### Cast Aluminum Cowl Ventilator

Oval Mouth

With Bronze Ring, Deck Plate and Cover

All Polished.

A light but substantial ventilator. The polished aluminum hood with its polished bronze ring and deck plate give a pleasing effect.

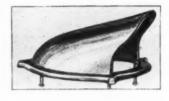
Prices include key for deckplate cover.



Diam. at leck plate	Dimensions of mouth	Height over all	
3 in.	6¾x4¾ in.	9 in.	
4 in.	71/4x51/2 in.	10½ in.	
5 in.	9 x6% in.	12 in.	

Weight No. Price 3½ lbs. 1601 \$10.00 4½ lbs. 1602 12.00 7½ lbs. 1603 16.00

#### Clam-Shell Ventilator



Used on speed boats in place of cowl ventilator, also as exhausting ventilator by reversing.

> Polished Bronze Stock No. Price

\$2.30

idth of	Extreme	777 1 4 4 4		
pening	height	Weight		
in.	2½ in.	11/2 lbs.		
51/4 in.	3 in.	21% lbs.		

#### Combination Bow Plate



This fitting serves as a finishing plate and bow chock on small runabouts. For rope up to 1" diameter.

Length Width 4½ in. 5 in.

Weight

Polished Bronze
Stock No. Price

1915

\$3.50

#### Fender Hook

A neat unobstructive fitting for attaching fenders.

Size Base 2x1% in. Weight 2½ oz.

Polished Bronze Stock No. Price 1914 \$0.60

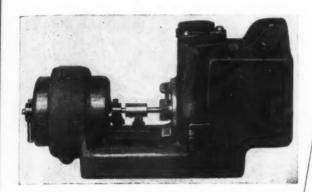
WRITE FOR DISCOUNTS

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#### CO Marine Specialin



Erico Electric Bilge Pump 24, 32 or 110 Volts



The Erico Electric Bilge Pump is a convenience and a necessity on every yacht. It is easy to install. It pumps a large volume of water. It is dependable. Turn the switch and the Erico electric bilge pump performs the only disagreeable work aboard a pleasure boat.

Gentlemen:

was equipped with an Erico electric bike pump,
and it gives so pleasure to electric bike pump,
sorked satisfactorily at a lifery pout that it
sorked satisfactorily at a lifery pout that it
started when called up rough the sear, it always
quickly and thoroughly.

As a rule it never required more than
good strong etreas.

Los sinces to empty the biker it three such a
purchasers.

Los heartily recommend it to prospective Gentlemen: purchasers. Very truly yours, HUBBARD E. ERICKSON & CO., Chicago, Atlampen Heilner\_

A compact, independent unit of small dimensions and large capacity. For permanent installation anywhere near the bottom of a motor boat or cruiser. An effective agent at a reasonable price, meeting a need long felt by boatmen.

Always ready to go! At the turn of a switch conveniently placed, it starts and does the work, so long as there is a little current in the storage battery. No need to start the heat's engine to operate pump.

Requires no priming. The chamber of this pump is so constructed that it retains water when idle, and thus preserves the prime. As the pump requires no attention when its function is needed and does not get out of order, it may be installed in an outof-the-way place, saving useful room for other purposes.

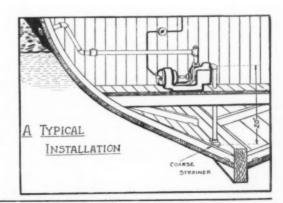
Small Consumption of Current. This pump has astonishing capacity and remarkably low current consumption of 4 amperes.

Made entirely of Bronze.

Width Over all Height Over all Type F Stock Number Length Over all Base Weight  $7\frac{1}{2}$  in. 21 lbs. 806 13½ in. 5½ in. 73/2×53/2 Tapped for Pipe Suction D scharge Capacity Per Min. Motor Price

16 H. P. 1 in. 1 in. 10 gals. \*Lift on suction end can be increased by reducing size of pipe on suction end.

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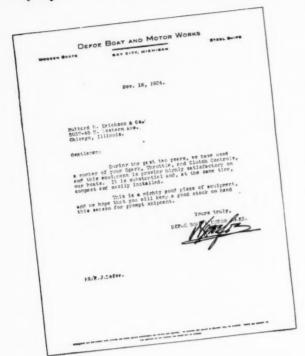


#### HUBBARD H. ERICKSON & CO. 3037 N. Western Ave., Chicago, Ill.

30 in.



#### DRICO Makime Specialties



#### Spark, Throttle and Clutch Levers

A combination that will save valuable deck space and simplify an otherwise awkward installation. The entire control of engine being at one convenient point where wanted.

Bracket for attaching to wheel box or bulkhead is adjustable and can be set at any height.

Clutch lever is hinged and is fitted with wing screw so that lever can be made stationary in horizontal position if desired.

Made entirely of bronze and brass. Machined and highly finished throughout.

Standard height from deck to top of controls is 42 inches. Additional charge for longer lengths.

Diam. Stock Column Weight; No. Price 154 in. 31 lbs. 1220 \$80.00



#### Column Spark and Throttle Control Cruiser Type

A high class cruiser should not be cheapened in appearance by installing a flimsy control. We offer here a substantially constructed, highly finished product which will add a touch of distinction to any boat. All bronze machined throughout.

The bracket, which attaches to wheel box or bulkhead, and the control arms below, can be adjusted to any horizontal angle; and deck flange can be moved up or down on column, according to requirements of installation.

Standard height of column, 48 inches, will be furnished unless other height is specified. Additional charge for extra length.

Column diameter Weight Stock No. Price 11/4 inch 11 lbs. 1201 \$20.00

#### Bulkhead Spark and Throttle Control

An all bronze, heavily constructed control, machined throughout and highly finished. The control handles and quadrant are of the same type as those on our column control, above.

This control can be installed in either a vertical or horizontal position. Control arms are adjustable to any angle, perpendicular to tube, as the particular installation may require.

The tube which extends through bulkhead is three inches in depth from base of flange. Can be furnished with longer tube at a small additional charge.

Column Diameter

Weight 5 lbs. Stock No. 1202

\$17.00



WRITE FOR DISCOUNTS

HUBBARD H.ERICKSON & Co. 3037 N. Western Ave., Chicago, III.

#### ERICO Marine Specialties



#### Erico Universal Stuffing Box and Shaft Log

(Cummins Patents, U. S. and Canada)

When this fitting is bolted in place in merely approximate alignment, perfect alignment of shaft bearing is readily adjusted without disturbing fastening surface. The feature which makes this possible is a ball joint in sliding plates, permitting not only change of angle of shaft bearing to fastening surface but also the movement of the point of bearing itself in any direction, up or down, right or left. Both this radial and lateral action are securely locked by a single cap nut.

As will be seen, this not only simplifies the initial installation but makes possible the easy readjustment to perfect alignment which becomes necessary from time to time through change in the relative positions of the parts of a boat through sag or strain.

Made entirely of best bronze bearing metal.

#### THE HACKER BOAT COMPANY

8904 8 /STFERBON AT



PTROIT AND US ALEMENS

DETROIT, MICH Sept. 5

Hutbard H. Erickson & Co., 3037 M. Western Ave., Chicago, Ill.

Gentlemen:-

the Erico chart ige. I am pour letter of the Srd with reference to using a number of these this essent is racing but and othersise,? I have decided to adopt these allogather and size specify sade Fr all of my sork.

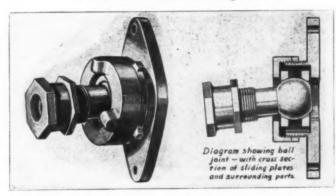
Decourry in cover lound from just experience that it seems amen is used great many cases to re-align the shaft after your shaft is the with the with the reverse in case in reason I counter the first shaft like the state of the is the market at the time and do not heat text one to be had among.

Yours very truly.

B.R.D

John L. Harles

#### Erico Universal Stuffing Box



Bored for Shaft	Dimensions of Base	Weight	Stock No.	Price	Bored for Shaft	Dimensions of Base	Weight	Stock No.	Price
% in. % in. 1 in. 1 in. 1 in. 1 in.	4½x2¾ in. 4½x2¾ in. 5¾x2½ in. 5¾x2¼ in. 6 x3½ in.	2½ lbs. 2 lbs. 3 lbs. 2½ lbs. 5½ lbs. 5½ lbs.	4571 4572 4573 4574 4575 4576	\$6.97 6.97 9.14 9.14 13.27 13.27	136 in. 136 in. 136 in. 136 in. 137 in. 2 in.	6% x4 ½ in. 6% x4 ½ in. 7% x5 in. 7% x5 in. 9 ½ x5 ½ in. 9 ½ x5 ½ in.	8¼ lbs. 8 lbs. 15½ lbs. 15 lbs. 22 lbs. 21¾ lbs.	4577 4578 4579 4580 4581 4582	\$19.70 19.70 30.60 30.60 43.25 43.25
*74 HH.	6 x3½ in.	5 % IDS.	4576	13.47		7/843/8 111.	2176 100.	4000	90.00

#### Erico Universal Shaft Log

				,	1				
Bored for Shaft	Dimensions of Base	Weight	Stock No.	Price	Bored for Shaft	Dimensions of Base	Weight	Stock No.	Price
56 in. 84 in. 16 in. 1 in.	16½x3 in. 16½x3 in. 16½x3 in.	6¼ lbs. 6 lbs. 7 lbs.	4583 4584 4585 4586 4587 4588	\$13.27 13.27 18.66	1 % in. 1 ½ in. 1 % in.	33½x4¼ in. 33½x4¼ in. 33½x4¼ in.	23¼ lbs. 23 lbs. 26 lbs. 25½ lbs.	4589 4590 4591	\$36.89 36.89 52.36
1 in. 1½ in. 1½ in.	16½x3 in. 26 x3¾ in. 26 x3¾ in.	6% lbs. 14% lbs. 14 lbs.	4586 4587 4588	18.66 29.37 29.37	134 in. 138 in. 2 in.	33½x4¼ in. 40½x4¼ in. 40½x4¼ in.	25½ lbs. 44 lbs. 44 lbs.	4592 4593 4594	52,36 91,40 91,40
			WRI	TE FOR	DISCOUN	TS			

#### HUBBARD H. ERICKSON & CO. 3037 N. Western Ave., Chicago, Ill.

When writing to advertisers please mention Motor Boating, the National Magazine of Motor Boating, 119 West 19th Street, New York





#### Erico Electric Stern Light



A sturdy polished bronze fitting which adds to its function as a light a touch of class.

Any height desired can be secured by substituting required length of 1 in. I. P. S. brass tube (standard threaded) for the brass nipple joining the two parts of pedestal in stock article.

Base diameter, 41/8 inches. Fresnal lens, 31/2 in. diam. by 3 in. high in clear. Fitted with double contact bayonet base socket for bulb. Weight, 11 lbs.

> Stock No. 4405

Price \$9.00

#### Combination Electric Post Light CLASS ONE

This post light can be used in place of the regular side lights on Class One boats under 26 foot in length, also serves as a mooring bitt and flag pole socket.

Highly finished in bronze or aluminum fitted with double contact base socket for balb and regulation size fresnal lenses.

New type retainer prevents rattling of lenses.

Height Base diameter Weight Stock No. Price 5¼ in. 5¼ in. 5½ lbs. 2½ lbs.





This electric post light can be used in place of the regular bow light on class 2 boats, and serves as a riding bitt or snubbing post as well.

A highly polished heavy bronze casting, fitted with double contact bayonet base socket for bulb and regulation size fresnal lens. A new type retainer prevents any rattling of the lens.

The socket in center of top is for flagpole.

Height 61/4 in.

Base diameter 7 in.

Weight 81/4 lbs. Stock No. 4404

Price \$12.50



#### **Electric Running Lights**

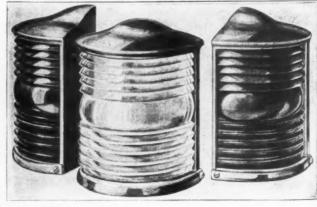
Polished Bronze
The frame of each of these lights is a single bronze casting, with reinforcing post on each side of bow light and on outer edge of side lights. The fresnal lens, regula-tion size, is firmly held by a new type retainer. Fitted with

double contact bayonet base socket for bulb.

The side lights are made in three sizes, for boats of class 1, class 2 and class 3.

The bow light is made in two sizes, for boats of class 2

and c	lass 3.			Stock	er
Class	Height	Weight	Set	No.	Set
1 2	41/4 in.	3 lbs.	Pair Side Lights	4401 4402	\$8.00 15.00
3	5½ in. 6½ in.	8 lbs. 11 lbs.	Three Three	4403	17.00



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#### Erico Electric Searchlights

New Type

Real marine searchlights, of new improved type, giving maximum of power possible for size of reflectors. These new searchlights combine the use of special Bausch and Lomb Parabolic Glass Reflectors, with Nitrogen incandescent lamps, and they produce the most powerful brilliant white beam light. Readily adjusted for narrow or wide beam.

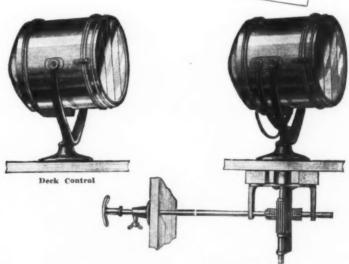
The construction is of the most substantial and durable character. Barrels of heavy 18 gauge brass with heavy reinforcing beads at each end. All other parts except body are heavy cast bronze.

Erico Electric Searchlights are fully guaranteed to give entire satisfaction, or they may be returned within 30 days and full cost will be refunded.









Remote Control

Furnished with medium screw base Nitrogen lamps as follows: 6 volts, 72 watts; 12 volts, 108 watts; 24, 32 and 110 volts, 100 watt or 250 watts as specified.

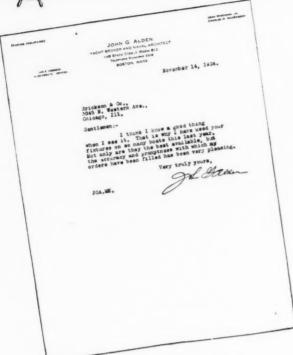
Stock Number 799	Type Deck Control	Diameter Barrel 834 in.	Length Barrel 9 in.	Height from deck 14 in.	Lens Plain	Weight 10 lb.	Price . \$55.00
800	Cabin Control	8¾ in.	9 in.	13 in.	Plain	14 lb.	80.00
801	Remote Control	8¾ in.	9 in.	13 in.	Plain	20 lb.	
900	Deck Control	11 in.	14 in.	16¼ in.	Sectional	18 lb.	90.00
901	Cabin Control	11 in.	14 in.	15¼ in.	Sectional	23 lb.	95.00
902	Remote Control	11 in.	14 in.	15¼ in.	Sectional	29 lb.	115.00

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HUBBARD H. ERICKSON & CO. 3037 N. Western Ave., Chicago, Ill.

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#### One Light Electric Bracket



Most compact fixtures of cast bronze highly polished with medium screw base sockets. Cut shows standard G-181/2 round frosted bulb.

#### Electric Dome Lamp



Highly finished cast bronze, hingeless, with silver-plated reflector and holophane shade.

5 in. fitted with double contact bayonet base socket. Weight, 1½ lbs.

8 in. fitted with medium screw base socket. Weight, 2% lbs.

Diam. Depth Without Switch over all over all Stock No. Price With Switch Stock No. Price 3 in. 4¼ in

Price does not include lamps.

#### Two Light Electric Bracket



#### Electric Bracket with Holophone Shade

Hangs close to wall, out of way.

Bracket of highly finished cast bronze.

Cannot rattle. The holo-phane shade is held firmly in place.

This light is fitted with pull-chain switch. Medium screw base socket.

Extreme Height **Extreme Projection** Prices do not include lamps.



Weight Price

#### Two Light Ceiling Fixture



Designed for use between roof carlins and whereever headroom is limited. Also makes an excellent wall fixture. bronze highly polished. Medium screw base sockets.

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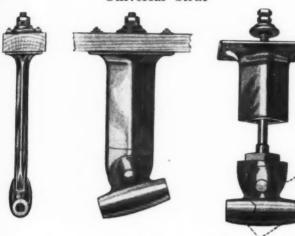
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#### 12 Fallat







This strut meets the demand for a stock fitting, and eliminates the delay and expense of designing a special strut and making patterns. More substantial and lighter in weight than a solid cast strut. Very easy to install as the clamping bolt and hanger may be fitted to the keel to determine the exact distance of drop, and the lower end of hanger frame can then be cut off to suit. The babbitted bearing is self-aligning to the shaft angle. Cast bronze. Streamline design. Stock Strut measures 12" from base to center line of shaft bearing.

Specify diameter of propeller shaft when ordering. Size Base 7"x31/2" Stock Number 6001 Weight \$20.00 11½ lbs.



Nov. 22, 1924

The M.H. Erickeon & Co., Chicago, Ill.

Yours truly, Dunphy Seat Mfg. Co Jemis Ramon



#### Mast Hinge

Polished cast bronze designed to hinge mast at canopy or deck house roof, or at any other point. The horizontal arms are 8" long, which allows for spar from 3" to 6" diameter; also for fastening to cabin roof. Horizontal arms can be cut off to conform with diameter of spar if projection is not required for fastening to deck house.

Height Over All 16 in.

Width 236 in. Weight

Stock Number 6010

\$16.00

#### Hinged Mast Step





Permits mast to be lowered parallel to deck. The right hand illustration shows step partially turned down.

Mast step diameter 3½ in.

Base flange diameter 5 in.

Weight 414 lbs.

Polished bronze Stock No. Price \$7.50

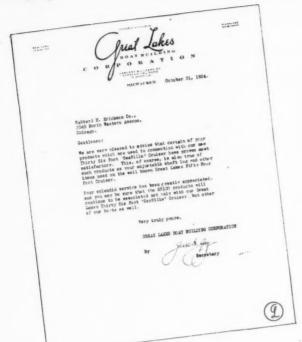
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#### Esteo-Marine Specialities



#### Bronze Yacht Cannon



A very handsome and practical saluting gun made entirely of bronze, highly polished and machined. Breech loading. Bored for 10 gauge blank shells only.

Length of	Height	Diam. of		Stock	
Barrel	Over All	Base	Weight	No.	Price
18 in.	16 in.	8 in.	30 lbs.	6002	\$80.00



#### Fancy Wood Steering Wheels

Our wheels are made of selected genuine mahogany, fastened throughout with brass screws capped with plugs, and fitted with two part polished bronze hubs which allows taking up play in spokes caused by shrinkage.

(Diameter is measured from tip to tip of spokes.)

Diameter of wheel	No. of spokes	Bored for shaft	Size keyway	Stock No.	Price
20 in.	6	1 in.	1/4 in.	1306	\$26,63
24 in.	6	1 1/8 in.	1/4 in.	1307	28.15
30 in.	6	1 1/2 in.	34 in.	1309	45.00
36 in.	8	1¼ in.	1/4 in.	1310	51.65
42 in.	8	1¼ in.	A in.	1311	69.78
48 in.	8	11/4 in.	A in.	1312	79.56

Wheels with two white holly ribbons inlaid on forward side, \$6.00 additional.



#### Erico Cruiser Type Chain Steerer

The most desirable type of steering gear for power cruisers and yachts; and adds materially to the appearance of your boat. Heavy roller link brass chain operating over bronze gear; all mounted on  $1\frac{1}{2}$ 6 bronze shaft, 10 inches long. These steerers are furnished with fancy mahogany spoke steering wheels, all natural finished, and fitted with two-part bronze hubs highly polished.

Stock Number	Diameter of Wheel	No. of Spokes	Weight	Price
1330	20 in.	6	18	\$66.00
1331	24 in.	6	19	70.00
1332	30 in.	6	22	85.00
1333	36 in.	8	28	100.00

Wheels with two white holly ribbons inlaid on forward side, \$6.00 additional.

WRITE FOR DISCOUNTS

HUBBARD H.ERICKSON & CO. 3037 N. Western Ave., Chicago, Ill.

Advertising Index will be found on page 30;

25

#### DEFECO VERTUE SOUR



Combination Flag Staff and Electric Stern Light

Mahogany



Combination aft flag staff and electric stern light, genuine mahogany, with brass ferrule. Fitted with polished bronze electric fixture and Holophane globe, wired complete with electric connector. All wires concealed.

Length Over all 45"

Diameter Base 1¼"

Weight 134 lbs. Price does not include flag.

Stock Number 6004

Price \$10.00

Stern Flag Staff Socket Polished Bronze



Made for use with combination aft flag staff, and electric stern light. Open base for stern light wires, and fitted with knurled head set screw to hold flag staff in place and keep electric connector on deck when flag staff is removed. For 1¼" flag staff.

Length 3% in.

S.

Width

Weight 1 lb.

Stock Number 6003

\$2.00

Richardson Boat Co., Inc. Frames, Hulls and Motor and Sailing Complete Equipment Picasure and Work Nov. 21, 1924

Yours truly,

Riena



Bow flag staff, genuine mahogany, well made and nicely finished in spar varnish.

Length Diam. Over All Base 26 in.

14 in. 1/2 lb. 6000 Price does not include flag. 134 in.

Weight

Stock Number 6005 \$2.00

Combination Sash Hinge





These hinges are fitted with knurled head screws which lock window when closed and also serve as anti rattlers.

Set consists of right and left spuds and two brackets fitted with adjusting screws.

Dimensions Spud Base 1x13/2 in.

Dimensions Bracket Base ½x2¼ in.

Weight per Set

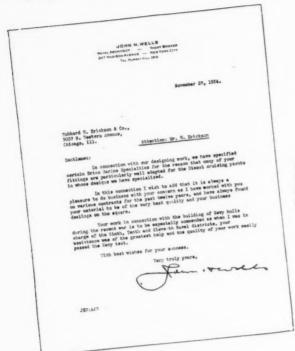
Price per Set \$2.00

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#### Standard Type Drum Steerers



Standard Type Steerer made entirely of brass and bronze fitted with corrugated mahogany birch rim suitable for small runabouts.

> Diam. Diam. Diam. Bulknead Wheel Column Drum to Wheel Weight Number 14 in. 11/4 in. 4 in. 24 in. 121/2 lbs. 1303



#### New Auto Type Drum Steerers with adjustable angle

This new type drum steerer incorporates the use of the latest model automobile steering wheel with genuine walnut rim and genuine walnut four spoke wooden spider. The new type short spark and throttle levers same as used in late model high grade cars, also have been adapted to this marine steerer. Also has electric horn button mounted in center, wired through column. The outside brass column is stationary and does not turn with the wheel. The inside steering column is packed in grease. 18" corrugated rim with four spoke wooden spider. This is the strongest, most substantial, and best finished drum steerer on the market.



1% in. 3½ in. 20 in. 20 lbs. 1304 \$35.00 New Auto Type Drag Link Steerer with adjustable angle

This new runabout steerer is gaining popular favor with designers and builders preferring the ropeless type. It has many advantages over common drum types; simple to install; positive and very powerful, and requires no attention after it is installed. 18 inch genuine walnut wheel, handle grip type rim, and genuine walnut four spoke wooden spider. New type short spark and throttle levers. Horn button in center. In place of a drum, an auto truck type worm steering gear is used, operating forged steering arm with ball joint at outer end. A separate steering arm of similar type is furnished with this steerer for use on the rudder post. These two steering arms are equipped with fittings so that the Steerer and Rudder may easily be connected together with galvanized iron pipe. The outside brass column does not turn with the wheel. Steering column and worm gears are packed in grease. Very substantial and beautifully finished.

Length Column Bulkhead to Wheel Diam. Wheel Diam. Column Stock Number Price Weight 1305 18 in. 20 in. 27½ lb. \$60.00 1% in.

WRITE FOR DISCOUNTS

Diam. Drum

HUBBARD H. ERICKSON & Co. 3037 N. Western Ave., Chicago, Ill.

Prio \$25, 00

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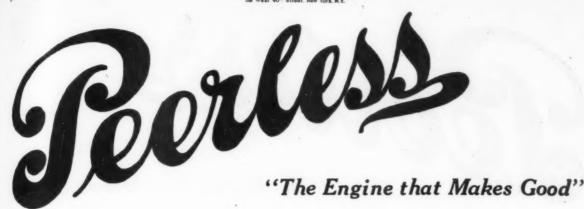
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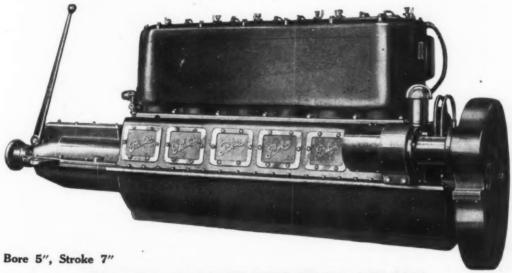
does

1.



#### **NEW PEERLESS LINE**

The new line of Peerless motors is the product of many years experience in designing and production of successful marine engines. Realizing that there is a large field for an engine having ample bore and stroke to develop its rated horse power at a speed that is practical and economical in actual service, we offer the new Peerless in both four and six cylinder models, in medium duty and semi high speed types. In order to produce this high grade motor at the price at which it is sold, it has been necessary to equip our plant with modern production machinery and confine our chief efforts to the production of this one type of motor.



 Medium Duty, 50 H.P. 600 R.P.M.
 100 H.P. 1200 R.P.M.

 Weight, 1350 lbs.
 Price, \$2000

 Semi High Speed
 140 H.P. 1450 R.P.M.

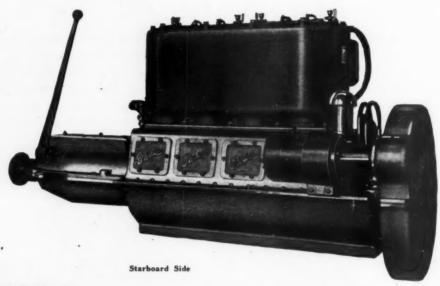
 Weight, 1050 lbs.
 Price, \$2200

#### DESIGN.

The new Peerless is the ultimate in marine engine design. All of the latest features which have perfected the power plants of the high class motor cars, have been incorporated. Simplicity and accessibility is apparent throughout the entire motor. In addition to the fact that these motors are simple and accessible, they are also very compact and can be installed in a minimum amount of space. By careful judgment, we have also kept the weight of these motors very low, however we have not sacrificed weight where it is really needed, and have a large factor of safety in every working part throughout the motor.

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Bore 5", Stroke 7"

Medium Duty, 35 H.P. 600 R.P.M. 70 H.P. 1200 R.P.M. Weight, 1000 lbs. Semi High Speed Weight, 850 lbs.

Price, \$1400 90 H.P. 1450 R.P.M. Price, \$1550

#### CONSTRUCTION DETAILS.

CYLINDERS—Semi-steel of the finest quality; of the L head type, cast enbloc. All cylinder bores, ports and valves are completely water jacketed. The walls are of ample weight to insure long life.

CYLINDER HEAD—Removable. The combustion cham-ber is of a special design which burns the charge completely, resulting in great economy, maximum power and almost a total absence of carbon deposit. By a long series of tests, we have developed this head to a point where we secure practically the same results as in the valve in head design. With the absence of a multiplicity of small parts, which means more reliable operation, less upkeep and extreme quietness.

CRANK SHAFT—Designed with a bearing between each cylinder; forged from nickel steel and heat treated; machined all over, resulting in perfect balance without excessive weight. Drilled for full pressure lubrication.

CONNECTING RODS-Of "I" section design, forged from nickel steel, accurately machined and balanced.

BASE—Of special cast iron, having very high tensile strength. Machined all over, insuring even thickness of walls without excessive weight. The crank shaft is

carried in the top half of the base. Hand holes are provided on both sides, allowing inspection and adjust-The oil pan is easily removed in case of neces-

PISTONS—Of a special mixture of cast iron; fitted with three rings and extremely light in weight, making smooth operation possible. Machined to very close size limits and interchangeable. The semi high speed motors are fitted with a special light weight aluminum piston.

BEARINGS—All main and connecting rod bearings have heavy bronze backs and are babbitt lined. Cam shaft bearings are of special bronze. The bearings are held to a very close size limit and can be replaced without the use of scraper, reamer, or other tools

CAMS AND CAM SHAFT--Cam shaft is made of ma-The cams are made of special steel, properly hardened and are secured to the shaft by a Woodruff key and pin. This construction results in accurate timing and makes it possible to replace a single cam if necessary. without replacing the entire shaft.

Advertising Index will be found on page 304

925

## Goldson Color of the Engine that Me

"The Engine that Makes Good"

TIMING GEARS—Only three gears are used in the entire construction of the new Peerless motors. The crank shaft gear is made of steel, the cam shaft gear of bronze and the generator gear of steel. The gears are of fine pitch, having an exceptionally wide face, and are practically noiseless in operation.

LUBRICATION—Full pressure lubrication to every part of the motor is supplied by a double oil pump mounted on the forward end of the motor and driven by a spline coupling from the forward end of the cam shaft. In case of necessity, this can be removed almost instantly. The engine base is of the dry sump type, the oil being carried in a separate tank, which is supplied with each motor. The oil passes through two separate screens. One side of the double oil pump takes the oil from the tank to the pressure line where it is delivered to all working parts at a pressure of from thirty-five to fifty pounds. The other side of the pump takes it from the base back to the oil supply tank.

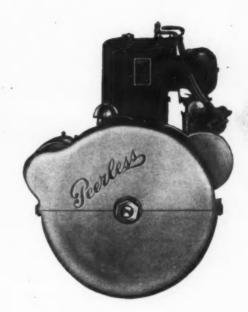
WATER PUMP.—Of the gear type, made entirely of bronze.

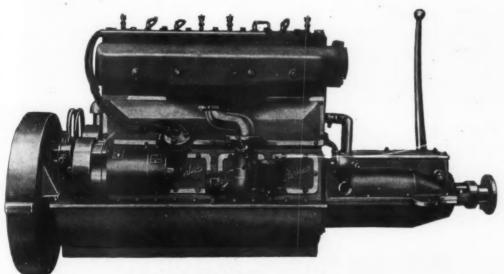
Operates at cam shaft speed, insuring long life. It is driven through a flexible coupling from the after-end of the cam shaft, and can be easily removed.

IGNITION—Atwater Kent with automatic advance, built integral with the generator; very accessible for inspection and adjustment.

STARTING AND LIGHTING—Leece Neville twelve volt, two unit, system; complete with storage battery, necessary switches, ammeter, circuit breaker, etc.

REVERSE GEAR—Multiple disc type, running in a bath of oil supplied by the full pressure system on the motor. Reverse ratio eighty per cent of forward speed.





Port Side 4-Cylinder Motor

When writing to advertisers please mention MoToR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York

## 6 Corless "The Engine that Makes Good"

RECENT PEERLESS INSTALLATIONS



#### "Elmar II"

A 46' x 12' heavily built cruising boat, completely equipped; owned by Mr. Joseph Flashner of New York City. The power plant is one of the new 35-70 HP Peerless motors, equipped with a 24 x 22 three blade Hyde wheel, turning at 800 R.P.M., giving the boat a sustained cruising speed of 12½ miles per hour. Mr. Flashner reports the service received from this motor has been entirely satisfactory. It operates quietly and without vibration; is flexible in speed control and economical in oil and gasoline consumption

#### " Winona"

A 38' x 10'6" heavily built cruiser, owned by Mr. W. Grant King of Buffalo, N. Y., used on Lake Erie and the Niagara River. In building this boat, Mr. King's first consideration was seaworthiness and the boat is completaly equipped for cruising. The power plant is one of the new 35-70 HP medium duty Peerless engines, fitted with a 24 x 20 three blade Hyde wheel, turning at 800 R.P.M., giving the boat a speed of 10½ miles per hour. Mr. King is very enthusiastic in his praise of this motor, it having operated throughout the entire season very satisfactorily. In addition to its reliability, it has proven quiet and smooth in operation and extremely economical in both gasoline and oil.



#### "Edward C"

A 35' x 10' heavy type fishing boat, owned by the United Fisheries Company of Sandusky, Ohio. It is one of a fleet of five similar boats equipped with a four cylinder 35-70 HP medium duty Peerless motor. The first of these motors was put in operation the first of April and has given steady reliable service driving this heavy boat to and from the fishing grounds each day, a distance averaging about 80 miles. Since this motor was put in operation, the United Fisheries Company has added four more of the same type to their fleet. All of these boats are equipped with 23 x 20 three blade Hyde wheels, turning at 1000 R.P.M., giving a boat speed of 14 miles per hour.



#### " Hurrah"

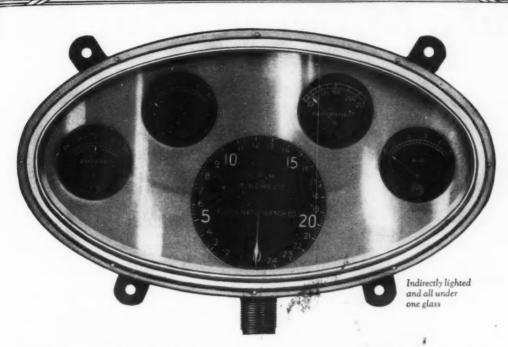
A 28'6" x 8'6" Hand V Bottom semi cruiser, owned by Mr. Olin C. Derr, Wilkes-Barre, Pa. and used on Lake Champlain. This boat is equipped with a 90 HP Peerless semi high speed motor and turns a 18 x 24 three blade Hyde wheel at better than 1200 R.P.M., giving the boat an actual speed of 25 miles per hour. This boat has been used extensively for ferry service and fishing trips and Mr. Derr states that it has poperated very satisfactorily, having proven reliable, economical and extremely smooth and quiet in operation.



#### PEERLESS MARINE MOTOR CORP.

2160 NIAGARA ST., BUFFALO, N. Y.

Advertising Index will be found on page 30;



#### The Elgin Unit Control Board—

Less Than 6 Months on the Market—Yet the Accepted Standard

IN LESS than six months after its introduction, the Elgin Unit Control Board has become the most popular motor boat accessory of the year.

Its beauty, compactness, dependability, and above all, its practicability, have won the enthusiastic approval of the most exacting motor boat owners and builders.

Motor boat builders are outspoken in their praise for this feature. They have been quick to recognize, and certainly appreciate its simplicity of installation. Motor boat owners reflect this same degree of enthusiasm for the reason that it harmonizes with the appointments of their boats and fills a long-felt need for compactness and utility.

Detailed Blue Prints, Specifications and Prices will be promptly sent you on request. Address

See for Yourself at the New York Motor Boat Show

NOTE the difference between old style Instrument Boards and the beauty, compactness and convenience of the new Elgin Unit Control—Used as standard equipment on most of the finer boats on display.

TACHOMETER DIVISION

ELGIN NATIONAL WATCH COMPANY

86 East Randolph Street · CHICAGO, U.S.A.

TP.

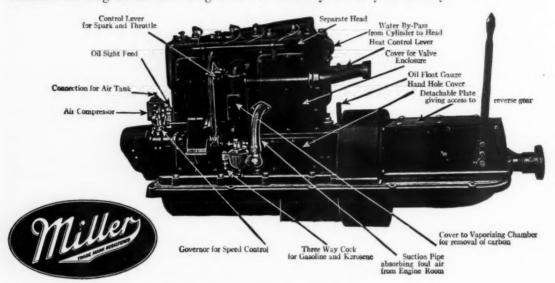
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## Put a Miller in Your Boat

#### And Put the Difference in Your Pocket

The experienced boatman like the successful business man does not go shopping for cheapness; he wants the greatest value for his money and finds it in the Miller.

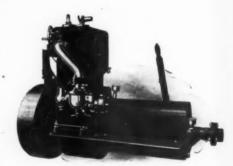
In buying a Miller engine you do not buy the cheapest marine engine made, but you do get more quality and better value tor your money. The Miller is the most economical engine in the long run—it actually saves you money.



In selecting a marine engine assume that your livelihood depended upon its earning capacity as a power plant for a commercial or passenger boat. Investigate the maintenance and operating cost of the engine, they are of prime importance, more important than the initial cost—they are the profit eaters. It is in the low operating and maintenance cost that the Miller excels.

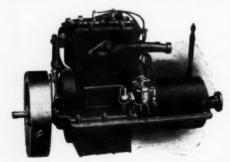
Compare the Miller design, features, quality of construction and price with all other engines of its size and power. You will discover that engines of power equal to the Miller

sell for 50% to 100% more. You will find engines of



Miller Model F-1 and I-1. Medium Duty, single cylinder. 4 and 6 HP.

the same power that sell for less, but you will not get the Miller standard of quality. You will not find a more honestly built engine than the reliable Miller or an engine that will give you more power year in and year out per dollar for cost of operating and maintenance.



Miller Model F-2 and I-2. Medium Duty, 2 cylinders, 10 and 14 HP.

MILLERS MOTORS CORP.

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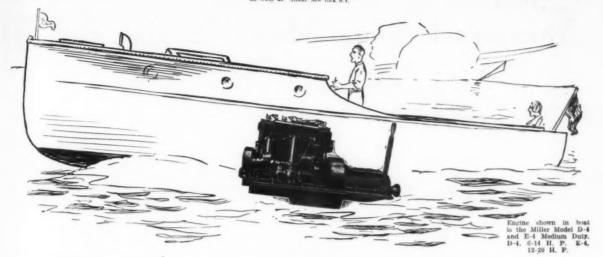
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#### Miller Facts That You Should Know

Study each feature carefully. Picture in your mind the building of this engine as you read - its staunchness and simplicity.

CYLINDERS

Cylinders in the Miller are made from special close grained gray i.on and cast en bloc on all two and four cylinder motors. Heads are separate to allow of quick removal of carbon deposit and ea y 16p acement of pistons. The design is 1-head type, a more economical and in practice superior to the T-head. All cylinders are finished to gauge inside by improved grinding machinery made exclusively for this purpose. The water jackets are extra long.

Pistons are of the same metal as the cylinder. They are of libe al length, ground to size, and fitted with four rings and oil grooves. The piston pins are of high grade material, carbonized and ground. CRANK CASE.

The lower base is a one-pleec casting, supporting the motor and reverse gear firmly, insuring perfect alignment at all times. The base flange is planed to fit foundation and is constructed in the form of a channel, so as to gather the surplus oil and prevent same from running on the bilge. The upper base carries the crank shaft, cam shaft and oiling mechanism. Large handhole plates on both sides of same give free access to shaft and other parts.

Connecting reds are of drop forged steel, i-beam section. The upper or piston end is provided with a phosphor bronze bashing, and lowered is fitted with bronze shells lined with nickel babbit. The caps are held in place by special bots, castellated nuts and cotter pins.

Fly wheel is placed toward II. WHEEL.

Fly wheel is placed toward II. WHEEL for motor, close to the reverse gear, where it will absorb the shock and strain without transfering this to the full length of the crank shaft. It is completely enclosed and supported by a bearing on each side, except on Model E.

The reverse gear is of the multiple disc type, our own design and construction.

CRANK SHAFT

Crank shafts are of .45 carbon steel. The entire shaft is finished with

CRANK SHAFT
Crank shafts are of .45 carbon steel. The entire shaft is finished with extreme accuracy and care, and is supported by a bearing between each cylinder and extra long bearings at the ends. All bearings are lined with nickel babbitt.

lined with nickel babbitt.

Cam shafts and cams are a one-piece drop forging, hardened and ground to within 002° neutron enter bearing is provided for all four-cylinder shafts which is fitted with bronze split bushing. Shaft may be removed or replaced without disturbing any adjustments or alignment of parts. All gears are enclosed.

WATER PUMP

The D-4, E-4, E-6 models are equipped with a bronze rotary pump, driven at crankshaft speed. Pumps are of ample capacity to keep engine at right temperature. All other models are fitted with b:onze plunger pumps driven at cam shaft speed.

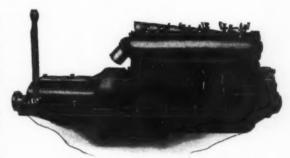
VALVES

Valves are of large diameter and proper proportion, moving in ex-

plunger pumps driven at cam shaft speed. VALVES
Valves are of large diameter and proper proportion, moving in exceptionally long guides. Both intake and exhaust valves are enclosed and mechanically operated, insuring positive action, and can be readily removed and interchanged.

A Schebler carburetor, especially made to suit Miller requirements is furnished with all models. This same style and type carburetor is also used in connection with the Miller kerosene attachment.

Miller advocates the use of a high tension magneto as the best and most reliable means of ignition, and all four-cylinder motors are equipped with a magneto of first class make with impulse starter coupling as regular equipment. This coupling eliminates the use of an extra coil and dry battery, which have often proved a source of amoyance. It permits starting the engine direct from the magneto at any desired cranking speed, even the very slowest. Other models are supplied with jump-spark coil and battery. A high tension magneto with impulse starter coupling will be supplied, if desired, at an additional cost.



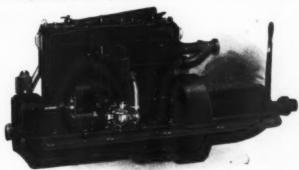
Miller Model E-6, 25-35 H. P. Power Plant. All Enclosed Unit

LUBRICATION

Miller two and four-cylinder motors are provided with an oil reservoir in base and by means of an efficient oil pump, operated from the cam shaft, the oil is forced through a glass indicator to the front end of the motor, and from there it is evenly distributed to the various moving parts. Other means of lubrication are supplied through centrifugal force in connection with the general splash system and special pick-up tubes fitted to the connecting rod caps. The tubes at every revolution of the crank shaft spread a sufficient amount of oil to the cylinder walls, piston bearings and other moving parts, and keep these constantly lubricated. Models F-1 and I-1 are fitted with a sight feed glass oiler.

A most important

A most important consideration is the fact that our motors are offered and sold complete with the full marine equipment, no essential parte being omitted, and the purchaser should bear this in mind when making a comparison of prices.



#### 2333 N. Talman St., Chicago, Ill.

Miller Model F-4, I-4, R-4, and S-4, Medium and Heavy Duty, 4-Cylinder Engine, F-4, 18-24 H. P. I-4, 24-30 H. P.

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#### America's Leading Marine Engine Juilders

(Continued from page 152)

DIESEL						7	The New		on Shi	p & Eng	gine Co	<b>.</b>				N	LSE
Model							Bore and stroke	No. of Cylrs.	Cycle	R. P. M	M. Wei	who	Lubrication			Operating	. C
120VHFS						power 120	9x123/2	4	4	350	18,1		Forced feed				njectio
180V4FS.						180	9x123/2	6	4	350	20,5		Forced feed				njectio
240V8FS.						240	13x18	8	4	350	30,7		Porced feed				ijection
220V4FS.						220	13x18	4	4	240	41,0	000	Porced feed			Air in	jection
330V4FS.						330	13x18	6	4	240	55,2		Forced feed			Air ir	njectio
140V4FS						440	13x18	8	4	240	75,5		Forced feed				njection
6GV24						600	1634x24	6	4	205	120,0	000	Forced feed			Air is	njectio
							Niag		tors (	Corporat	ion					NIA	GAR
Model	Horse power	Bore		No. of Cylrs.	Cycle	R. P. M.	Weight			rerse gear	Starting	device	Ignition system	Sparl	k plugs		oureter
3	5		x4	1		700-1000	160	Force					Bosch			Zenith	
pecial	15	23/	x4	4	4 !	900-1500	325	Force	Joe	's			Bosch	Cham	pion	Zenith	
2-2	. 14	434x	51/2	2	4	700-1000	450	Force	Ow	n			Bosch	Cham	pion	Wheeler-S	Schebl
-4	35	43/4 x	51/2	4	4	700-1000	725	Force					Bosch			Wheeler-	
)-4	80	61/4		4		700-1000	1075	Force					Bosch		pion	Wheeler-	
-6	120	61/4	x.7	6	4	700-1000	1550	Force	Ow	n I	Leece-Ne	ville	Bosch	Cham	pion	Wheeler-	Schebl
							Pack		tor C	ar Comp lich.	oany					PAC	KAR
Model	Hors		e and roke	No. of Cylrs.	Cycle	R. P. M	. Weight	Lubrica	ation	Reverse		Starting device	Ignitio		park plug	8 Ca	arbure
M-268			3/8×5	6	4	1800	625	Full press		Paragon		neto					Zeni
M-357			%x5	8	4	1800	790	Full press		Paragon	Dy	neto	. Delco				Zeni
M-618			514	6	4	2300		Rull press.		Joe's		т					Zenit
М-1237			51/4	12	4	2300		Full press				1T					Zeni
M-1551	. 275	65/	x73/2	6	4	1400	1690	Full press		Joe's	Biji	ur	Delco			**	Zen
							Pali		os. En	gines, li	nc.					PA	LMI
Model		Hor		Bore and stroke		o. of drs. Cyc	le R.P.	M. Weig	1	Model	1	Horse	Bore and stroke	No. of Cylrs.	Cycle	R. P. M.	Wei
T			2	3x31/2								60	63/x8	6	4	400	3
T2			5	3x3½		2 4				Κ2		25	63/8x8	2	4	400	10
L1			336	4½x4½		1 4				K3		35	7½x10	3	4	400	35
L2				41/2×41/2		2 4		00 50		K4		50	7½x10	4	4	400	42
W1			3/2	53/x6		1 4				Κ6		80	7½x10	6	4	400	56
R1				5x6		1 4		00 43				4	436x436	1	2	450	1
R2				5x6		2 4	6	00 75				6	5x6	1	2	400	3
R3		18		5x6		3 4	6	00 100				23/2	3%x31/2	1	2	500	1
R4				5x6		4 4	6	00 125	50 Q2			5	33/4×31/2	2	2	700	1
2		18		6 3/8 x 8		2 4	4	00 160	00   VH	ſ		14	3x41/2	4	4	2000	7
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						2				Aotor Co Buffalo,						PEER	RI.ES
M	[ode]		Horse			. of	R. P. M.			ication	Reverse	e gear	Starting dev	rice Ig	nition sys	tem Carl	
edium du			70	5×7	4	4	1200	1000			Peerless.		Leece-Nevill		water-Ker		
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ni-high s			90	5x7	4		1450	850			Peerless.		Leece-Neville		water-Ker		
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## Announcing Beaver Marine Engine

Beaver—widely known, tested and proven, Brute Strength Engines—are now offered to the marine field.

For more than 22 years, Beaver Engines have been successfully serving hundreds of industries; they have been furnishing ample and dependable power for leading heavy duty equipment. They have been termed the engine with Brute Strength—and rightly so.

And now they are ready for marine use.

In the design and construction of the Beaver Marine Engine, steady, dependable service is emphasized. All working parts are made large so that the engine is responsive and long lived. It has a force feed lubrication system which is fool-proof and trustworthy. There are no delicate or intricate parts, consequently it is trouble-free and most dependable when the going is the hardest.

Before deciding on the power for your boat, be sure to investigate the Beaver. It embodies advantages that boat owners will welcome. Write for them today.

#### BEAVER MANUFACTURING CO.

41 25th St.,

Milwaukee, Wis.

#### Specifications

OF AN

of the Beaver Marine Motor Model JB

General Type—Vaive-in-head Cycle—Four Number of Cylinders—Four Bore—4½" Stroke—6" Horsepower SAE Formula—36.1 Horsepower Developed—46.5 at 1000 RPM Weight of Complete Engine—1175

#### PISTONS

Type—Light Weight
Material—Cast Iron
Number of Rings—Four
Length of Piston—5 5/16"
Distance, Center of Pin to Top
of Piston—2 8/16"

PISTON RINGS

Material—Cast Iron Width—3/16"

#### CONNECTING RODS

Connecting Rod Type—I Beam Material—40 Carbon Steel Length Center to Center—1244"

#### CRANKSHAFT

Material — 3140 SAE Chrome Nickel, (Steel) Double Heat Treated

#### VALVES

Material—Silcrome Steel Outside Diameter—2 3/16" Diameter of Stem—7/16" Valve Lift—3/8" Seat Angle—45°

#### EQUIPMENT

Leece-Nveille 12 Volt Starter and Generator 12 Volt 132 Amp. Hour Battery Stromberg Carburstor Eisemann or Bosch Magnaco Jos's Reverse Gear

for steady service BEAVET

#### THE AMERICAN POWER BOAT ASSOCIATION

#### ANNOUNCES

#### THE HORACE E. DODGE MEMORIAL TROPHY

A PERPETUAL CHALLENGE CUP
DONATED BY

MR. HORACE E. DODGE OF DETROIT
IN MEMORY OF HIS FATHER

THE WINNER OF EACH CONTEST UNDER THIS
DEED OF GIFT WILL BE AWARDED THE

### GRAND NATIONAL INTERCLASS CHAMPIONSHIP OF NORTH AMERICA

THE OBJECT OF THE HORACE E. DODGE TROPHY IS TO PROVIDE A BROAD CLASS EMBRACING BOATS OF WIDELY VARYING SIZE AND POWER, COMPETING UNDER CONDITIONS FAIR AND EQUITABLE TO ALL, THEREBY PROMOTING TRUESPORTSMANSHIP

AND FACILITATING THE HIGHER DEVELOPMENT OF HULLS AND POWER PLANTS.

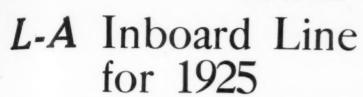
COMPLETE RULES AND THE DEED OF GIFT GOVERNING THE TROPHY WILL BE SENT UPON APPLICATION.

THE INITIAL CONTEST FOR THE DODGE MEMORIAL TROPHY WILL
TAKE PLACE AT

MIAMI BEACH, FLORIDA, MARCH 20 AND 21, 1925

ENTRIES MUST BE RECEIVED BY THE RACE COMMITTEE ON OR BEFORE FEBRUARY I, 1925.

Inquiries For Further Information May Be Addressed to C. F. Chapman, Editor of MoToR BoatinG, 119 West 40th Street, New York, N. Y.



FOR 1925 the Lockwood-Ash Motor Company will Continue the three L-A inboard motors which have so thoroughly established themselves with the boating fraternity—the Model 41, Ford Part Engine, the Model 68, 2 cyl. 2 cyc. engine, and the Model 24, single cyl. 2 cyc. engine.

These sturdy marine motors, backed by 22 years of sound engineering and reliable construction, stand today as the utmost in sturdiness and dependability. Boatmen throughout the entire country have found them staunch under all conditions of service, easy to operate and easy to maintain. Lockwood-Ash motors make good because they are good.

LA Model 68

and 8 H.P. 2 cyl-2 cyc. 6 and 8 H.P. 2 cyl-2 cyc. Engines 6 H.P. for 15 ft. to 24 ft. craft. 8 H.P. for 20 ft. to 30 ft. craft. Equipped with battery ignition. Bosch Magneto and Impulse Coupling, if desired. Smooth running—easy starting—powerful—silent —clean—pleasing in appearance. Write for complete information.

LA Model 24

2½ and 4 H.P. Single cyl-2 cyc. Engines, 2½ H.P. for 14 ft. to 18 ft. craft. 4 H.P. for 16 ft. to 20 ft. craft. Equipped with Battery ignition. Bosch Magneto and Impulse Coupling, if desired. Simple-sturdy-easy starting-easily maintained. Ideal for inland lakes and rivers. Write for detailed description,

The Lockwood-Ash proposition for dealers is an interesting one. Write for complete information on models pictured above, and particulars. complete about the L-A dealers' proposition.

Builders of Marine Engines for 22 years

Ford Part Engine

Single cyl., 4 cyc. 5 H.P. Motor. Built around Ford sized parts—replacements anywhere. Has Bosch Magneto and Impluse Coupling as standard equipment. Battery ignition in place of magneto if desired. Many desirable features. Weighs approximately 165 lbs. Detailed information on request.

LOCKWOOD-ASH DISTRIBUTORS

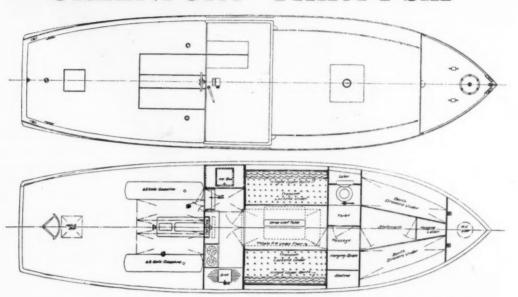
LCCKWOOD-ASH DISTRIBUTORS

BROOKLYN, N. Y., Hyde Boat & Engine Co., 55 Fourth Ave. at Bergen St. NEW ORLEANS, LA.: Arthur Duvic's Sons, 122 Chartres St. PHILADELPHIA, PA.: Marine Engine Co. of Phila. Bourse Bldg. SEATTLE, WASH: Pacific Marine Engine Company, 906 Western Ave. NORFOLK, VA.: Mianus Diesel Ergine Co., 116 Boush St. NEWPORT, ARK.: Henry M. Owen. FORT WORTH, TEX.: Veihl-Crawford Hardware Co. JACKSONVILLE, FLA.: Burroughs-Mc-Meekin Co., 30 E. Bay St. MONTREAL, QUE., CAN.: F. I. Mitchell, 633 Notre Dame St., E ST. LOUIS, MO.: Wm. Grossmann, 1630 Pine St. HARBIN-GER, N. C.: R. L. Gallop Hdw. Co., PORTLAND, ME: Mianus Motor Sales Co., 19 Custom House Wharf. LOS ANGELES. CAL.: V. L. Walker, 1635 Kenmore Ave. FACTORY REPRESENTATIVE FOR PACIFIC COAST: Gordon Snedekor, 1217 J St., Sacramento, Cal. FOREIGN EXPORT OFFICE: 116 Broad St., New York, N. Y., Harold Fee, Mgr.

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#### GREENPORT "THIRTY SIX"



DESIGN—Maximum seaworthiness and comfort in 36 ft. x 10 ft. x 3 ft. hull.

ACCOMMODATION-Stateroom for two-Main cabin for four-Separate galley-Two ways to deck. Cockpit fourteen feet by eight foot six—All one level—Toilet between cabins.

MACHINERY—Central control—electric starting and lighting—four cylinder 5 x 7 Peerless housed under cockpit floor—Power for 10 knots—vibrationless and quiet.

EQUIPMENT—Complete deck and galley gear—exclusive of linen and bed covering.

TANKS—160 gallons gasolene—70 gallons fresh water—100 lbs. ice—Ample hanging lockers -stowage lockers.

FINISH—High grade mahogany trim paint surfaces—colors to suit.

Workmanship and Materials "Greenport" quality and guarantee.

Price \$7,000 afloat at yard. Designed and Built

#### THE GREENPORT BASIN & CONSTRUCTION COMPANY GREENPORT, NEW YORK

Telephone 88 Greenport—By auto 97 miles from New York—Long Island Railroad

Advertising Index will be found on page 304

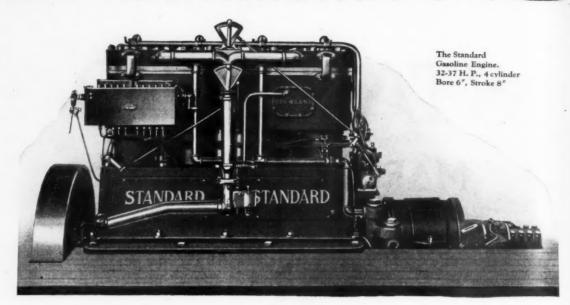
## STANDARD

### MARINE ENGINES Since 1892



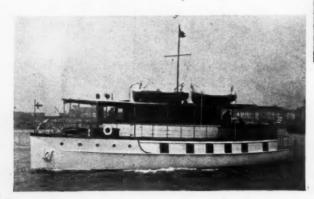
iliary schooner "Mary Rose" powered with a 20-24 H.P. Standard.

#### STANDARD 6



WHETHER in the steady heavy grind of commercial service or the extended cruise of a pleasure craft the Standard owner knows that his engine will withstand the punishment of its task, without the least strain. The high sustained cruising speed of the Standard Gasoline Engine discloses the supremacy of Standard quality and design.

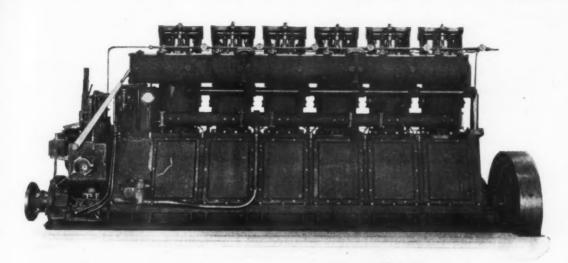
The Conowingo, Mr. G. W. Fleming's 60 ft. houseboat has a high efficiency power plant made up of two 4-cylinder 6" bore x 8" stroke Standard Gasoline Engines.





"Momeena" a vaised deck cruiser 30 ft. in length, and although heavier than launch shown on the right is successfully powered with a smaller Stan lard Engine of 10-12 H.P.

#### STANDARD 6



This six cylinder, 135 H.P. at 350 R.P.M. full Diesel, airless injection engine, direct reversible, is giving a remarkably good account of itself in the Tunnel Stern Tow Boat "H. S. Hennen" shown below, owned and operated by Capt. J. J. Hennen, Evansville, Indiana.

A CHARACTERISTIC of the Standard design is the employment of the fewest and simplest parts. Throughout its makeup it is essentially marine, neat and clean in appearance, following marine engineering lines. There are no awkwardly designed levers or afterthought attachments. Its major simplicity shows lines of true art and beauty in design and bespeaks its practicability. For practicability is simplicity.

Standard Marine Oil Engines are built in sizes ranging from 90 H.P. up to 300 H.P. supplying maximum operative economy and simplicity. Sturdy, dependable power plants for Tow Boats, Fishing Boats, Work Boats, Yachts, etc.

Write for full details.



"H. S. HENNEN"



EVERY Standard sold while it is no longer our property it is still our business to follow its career and to assure its service to the complete satisfaction of the owner.

The Standard Motor Construction Company through its long years of powering craft of every type has carefully recorded the results in service and accumulated a vast amount of data of inestimable value to you.

In pursuance with its unalterable policy of advancing boating pleasure to the highest degree the Standard Motor Construction Company bestows an unusual amount of care on the manufacture of Standard engines, from the selection of raw material to the installation of the engine.

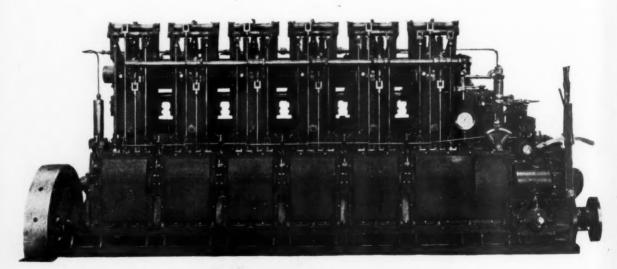
It is the realization of this policy, together with the "acknowledged best" of the Standard design, that is causing so many yachtsmen to follow the successful path of others in insuring themselves the maximum boating pleasure by powering their boats with Standard engines.

Write us your requirements

Back of the Standard Fuel Oil and Gasoline Engines is the

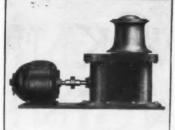
#### STANDARD MOTOR CONSTRUCTION CO.

178 Whiton Street, Jersey City, N. J.



Standard Diesel Engine, Airless Injection Direct Reversing, 6-Cylinder Type









#### A Line of Dependable Marine Auxiliaries Yachts, Houseboats, Powerboats and Pleasure Craft of Every Type

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Hand Steerers Hydraulic Steerers Hand Windlasses Electric Windlasses Boat Hoists Sail Hoists Anchors Cleats, Chocks, etc

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for prices, illustrations and descriptions of the entire line.

The A-E-CO Line of Yacht and Powerboat Auxiliaries wins the enthusiastic approval of the most critical marine engineer and the most fastidious yachtsman.

Easy, smooth operation, rugged strength and unfailing dependability are outstanding characteristics of these auxiliaries. Appearance has been given every consideration so that they do not mar the appearance of the finest yacht.

A-E-CO Auxiliaries are backed by over sixty years experience in the manufacture of ship machinery. To-day, they are found on the finest pleasure boats afloat-from palatial yachts to small cabin cruisers.

> Don't fail to visit Booth 41 at the Motorboat Show and see the A-E-CO. Exhibit.

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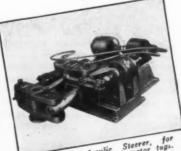
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"Leaders in the Marine Field for Over Sixty Years"





A-E-CO Steering Wheel



Hydraulic Steerer, for A-E-CO H

## LOEW-KNIGHT ENGINES

Knight Engines Now Available for General Marine Service

Now, for the first time, the Knight sleeve-valve type of engine is available for general marine service. This is made possible by an exclusive license, recently secured by this company, to build and sell the LOEW – KNIGHT MARINE GASOLINE ENGINE — the most efficient, smoothest-performing, most durable, marine gasoline power plant ever built. We make this statement without qualification, and mindful of the best of the other types of marine gasoline engines now on the market.

The LOEW - KNIGHT, because of its fundamentally different design, eliminates inherent faults of other types — faults that marine engineers have tried for years to overcome, without success.

#### Silent - Smooth

Silent sliding sleeves eliminate completely the noise of pounding valves. Supplementing the masterful performance of the Knight type of engine, the LOEW-KNIGHT is equipped with an oversized crankshaft, insuring perfect balance, a delightful smoothness in operation thruout the engine's entire range, and decreased bearing pressures, adding materially to the life of bearings. No other type of marine gasoline engine now known will perform as smoothly at all speeds as the LOEW-KNIGHT.

#### No Vibration

Vibration is eliminated completely. Think what that fact alone means when you are on a yachting cruise. Vibration means annoyance—continued annoyance that you cannot get away from. It means expense, and it means shorter life for the engine. No other type of marine gasoline power plant does away with vibration completely. AND THE LOEW-KNIGHT DOES.

#### No Valves to Grind

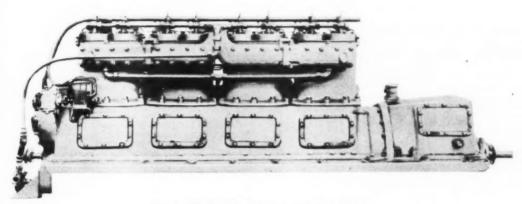
Grinding of valves is eliminated. LOEW-KNIGHT sliding sleeve-valves never have to be ground. They never even have to be adjusted. Marine engineers and shipowners who have had to face the frequent delays and expenses caused by removal and grinding of valves will appreciate what this means.

#### Loew-Knight Engines

The Most Efficient Marine Gasoline Power Plant in the World

## LOEW-KNIGHT ENGINES

Silent-No Vibration-No Valves to Grind-No Carbon to Clean-Longer Life



The LOEW-KNIGHT Marine Gasoline Engine

No Carbon to Clean

Carbon, in any other type of marine gasoline engine, decreases efficiency, and consequently has to be removed frequently. In the LOEW-KNIGHT, carbon promotes, rather than impairs, the engine's efficiency and smooth performance, by providing a closer fit than human hands can secure. And, of course, this means better compression and greater power, exactly the opposite of what carbon means in other types of engine.

Longer Life

Because it does its work more smoothly, with consequent elimination of wear and tear impossible to overcome in

other gasoline engines—because, in short, it is a superior, more efficient engine, the LOEW-KNIGHT will outlive other types by many years. This is true, of course because it is a Knight engine, and is doubly insured by large bearing surfaces. One of the most pleasing features of this engine is the increased efficiency which it shows after long, hard usage. In service that would necessitate frequent repairs to other engines to overcome power losses, the LOEW-KNIGHT goes on performing smoothly and dependably, gaining in power with use. LOEW-KNIGHT ENGINES have shown a highly gratifying, thoroly dependable performance over longer periods of time than the effective operating life of most boats—and certainly longer than the life of any marine gasoline engine of any other type.

#### A Proved Success

The LOEW-KNIGHT ENGINE is tried and tested—a proved success—demonstrat-

ing all that we claim for it in severest use over long periods of time.

If you are interested in the most efficient marine gasoline engine, see the LOEW-KNIGHT, and compare it, point for point, with any other gasoline engine. Above all, see the LOEW-KNIGHT in action. If you will do that, you will be just as enthusiastic about this engine as we are. In our many years' experience in building high-grade marine engines, we have never seen a marine gasoline engine, and we have seen all of the good ones, that compares favorably with this LOEW-KNIGHT for smooth, silent, efficient performance. Made in various sizes from 50 H. P. to 300 H. P., both heavy duty and high speed. Further details gladly supplied upon request.

See our representative at the Motor Boat Show, New York City.

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Sole Licensee and Manufacturer of Knight Marine Engines

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## America's Leading Marine Engine Builders

					Colo	dwater,	Engine Mich.	Co.						REG
3.6	odel		Horse			of	e R. P. M.	Weight	,	Lubricati	on	Revers	e gear	Ignition sys
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A			7	51/4x61/2	1	4	550	610	Pu	ımp				Timer
A			9	61/2×7	1	4	400	1000	) Me	cCord				Timer
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В			10	41/2x51/2	2	4	600	730	) Me	cCord	F	Paragon		Timer
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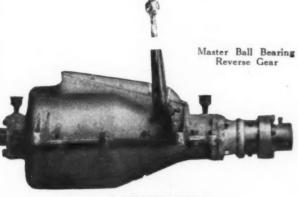
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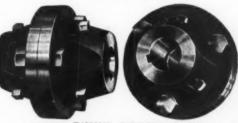
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## Late SEA SLED and Surface Propeller Developments

#### SEA SLEDS for 1925

The three following pages contain illustrations of four standard model Sea Sleds in production by The Sea Sled Co., the 25 and 22-foot runabouts, the 35-foot type designed both as a runabout and cruiser, and the 11 and 13 foot Sea Sled Dinghies. The fourth page shows a few of the many non-standard Sea Sleds built for special requirements. The Sea Sled Co. has built more types of high speed boats than any concern in the world and are now going into low speed shallow draft boats of the commercial type as well.

#### The 25-footer

Can be fitted with a half or full sedan top and is the result of three years of careful development. The single surface propeller is driven by a 6-cylinder Hall-Scott engine, installed behind the passenger cockpit, with the result that the boat is almost noiseless from the cockpit.

#### The 22-footer

The purpose of this boat is to supply a strongly built 30-mile Sea Sled capable of going practically anywhere the 25-footer can go and still not too large to be driven easily by a 4-cylinder Peerless or Hall-Scott engine or similar motor. Though built of mahogany this model is painted to avoid the expense of bright finish.

#### The SEA SLED Dinghies

The 11-foot and 13-foot Sea Sled dinghies, for rowing, all types of outboard motors, tenders, and even as sailboats, are already nationally known. The Company's production schedule calls for three hundred to be made during the winter, in anticipation of the spring demand. The Dinghy is becoming known as the only non-capsizable tender. The 11-foot size sells for \$170 and the 13-footer for \$190.

#### The 35-footer

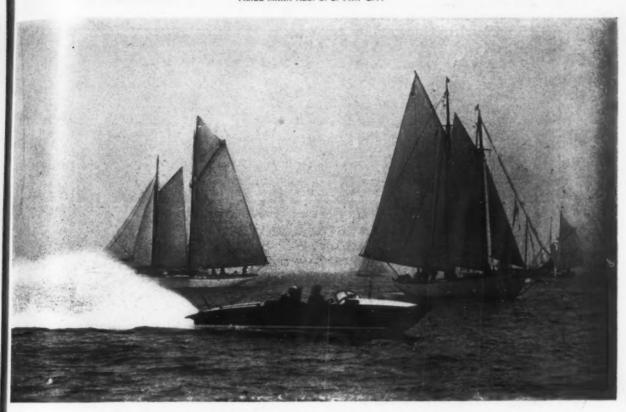
The 35-foot design has been developed from a number of the large double-engined Sea Sleds of about this size. The boat makes the finest seagoing high speed runabout or cruiser available. This size, in cruiser type, has been adopted by the United States Coast Guard. These are all-weather boats, capable of 40-45 m.p.h., and have been working as much as 60 miles off shore during the autumn.

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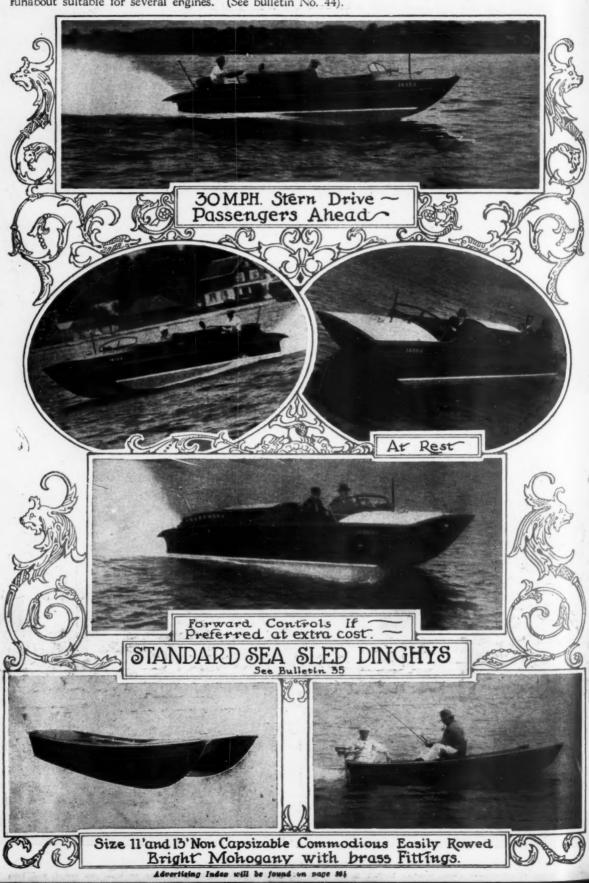
Standard 25 Footers. Single Engine. Single Propeller (See Bulletin No. 40)



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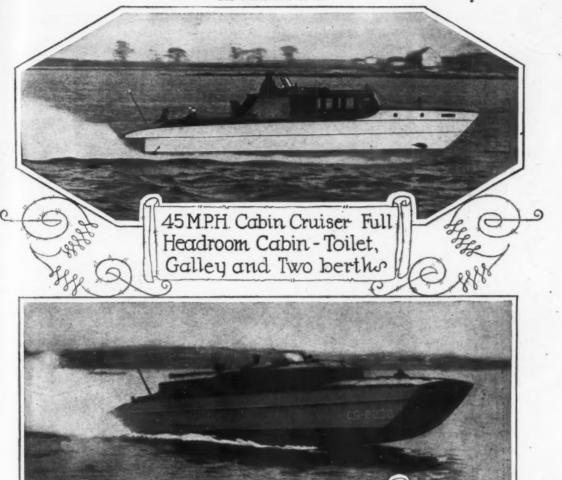
#### Standard 22 Footers. Single Engine. Single Propeller

The same relative advantages as the larger sleds in a staunchly built inexpensive 30 M.P.H. runabout suitable for several engines. (See bulletin No. 44).

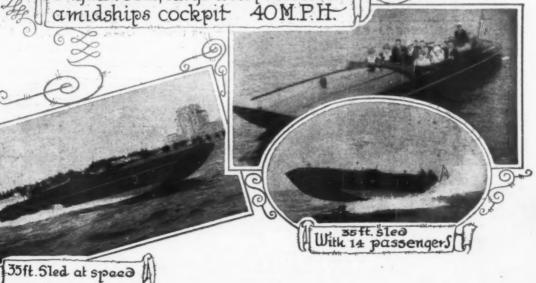


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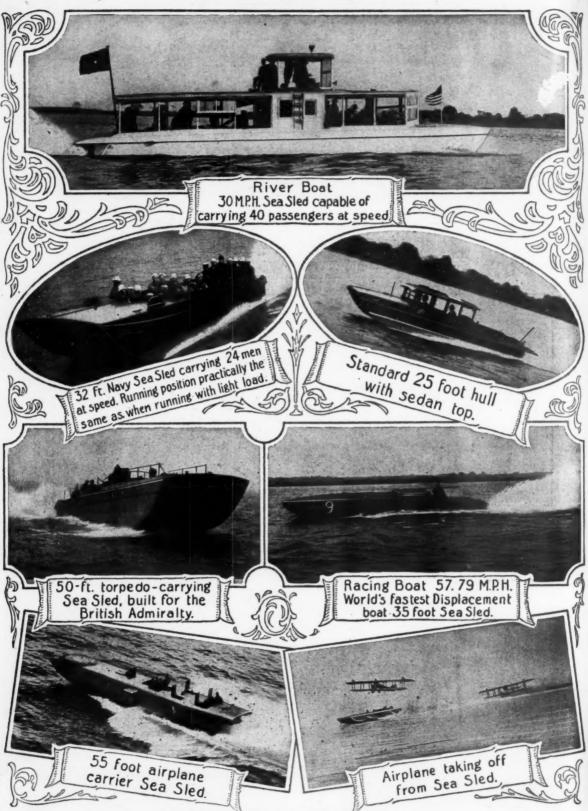
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The U.S. Coast Guard prefer this design. Full headroom Cabin and engine room, large well protected amidships cockpit 40M.P.H.



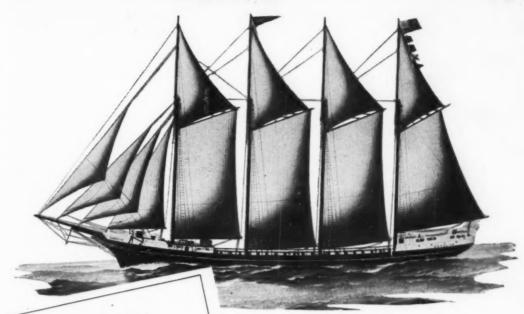
The runabouts have many variations for pleasure or commercial passenger carrying use.



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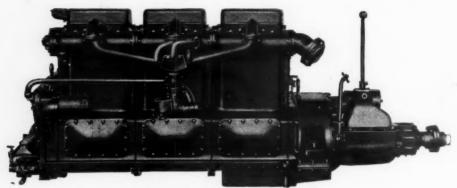
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N	6	51/2	6	600-1000	61-100	2100	\$2950.00
R	6	53/4	7	600-1000	83-123	2200	\$3500.00
N	6	51/2	6	1000-1500	115-156	2100	\$2950.00
R	6	53/4	7	1000-1500	152-205	2200	\$3500.00
N	8	51/2	6	600-1000	83-133	2700	\$3800.00
R	8	53/4	7	600-1000	108-176	2850	\$4300.00
N	8 .	51/2	6	1000-1500	142-208	2700	\$3800.00
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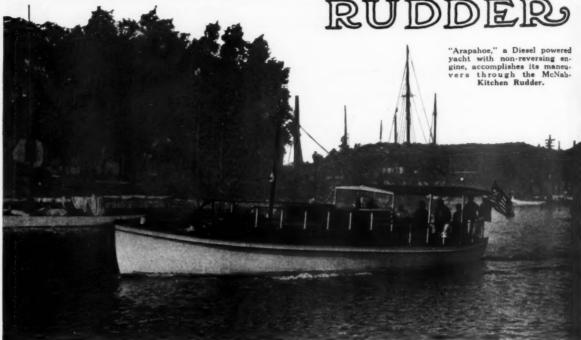
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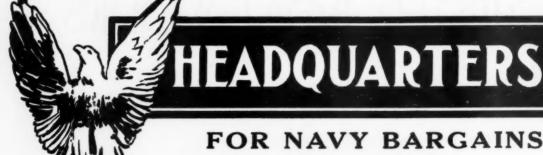
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Nothing like it on the market. Will throw a ray of light farther than any bulb searchlight we have seen. Easily spots an object over ½ mile away. Drowns any \$40.00 searchlight on the market. Has 8" reflector. Is 12" long and 8" high. Light can be swung anywhere. Nothing like it for picking up moorings.

While they last \$9.75



U. S. NAVY VARNISHED WATER KEGS
Hand made of sap clear white oak, galvanized
iron hoops, four legs, beautiful handle, brass noncorrosive filler plug and completely varnished.
Buy now at our low price before you regret your
lost opportunity. opportunity.

While they last, 3 Gal. Capacity \$3.50, 5 Gal. Capacity, \$4.00, 8 Gal. Capacity, \$4.50



STROMBOS AIR HORN Everybody knows the famous three mile Strombos horn. Operates on from 20-100 lbs. air pressure. Length over all 16". Made entirely of brass beautifully finished.

While they last \$20.00



STANDARD BRASS PORT LIGHT

Regularly used on small motor boots by the U. S. Navy. While they last, 6 in. \$4.00, 7 in. \$5.00, 8 in. \$6.50



U. S. NAVY BOAT CLOCKS

7 Jewel, 8 day, Cast Brass. No finer instrument can be obtained at any price. Absolutely brand new in original individual wooden boxes direct from the Naval Observatory at Washington, D. C. Size Over All 4%". Standard price \$42.00.

Our Price \$18.00

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BINOCULARS

Highgrade Prism Binoculars made for U. S. Navy. An ideal glass to take on boating or hunting trip. 6 Power. Adjustable sunscreen. Individual Lens focus. Complete in sole leather case. Weight 38 ozs. Sold in leading optical stores at \$70.00, Plus 5% War Tax.

Our Price, While They Last \$27.50

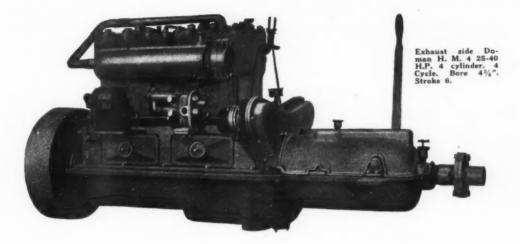
E. J. WILLIS CO. 85 Chambers Street - 67 Reade Street New York City

25

**Biggest** Value

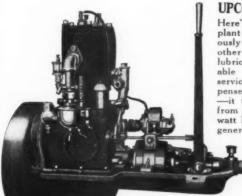


Best "Buy"



OMAN motors are built on time tested engineering principles by a company with 35 years of progressiveness in back of it. A company that is one of the few surviving pioneers in the business and why? Because Doman Engines have been designed on the basic principle of making owners more than satisfied with their Doman. There are five Doman models ranging from 4 to 50 H. P. and each represents the highest value in medium duty four cycle marine engines.





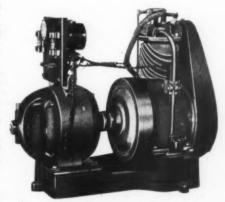
Doman "Fish Boat" 5-7 H.P. 1 cylinder, 4 cycle. Bore 434". Stroke 6". Extended Base and Reverse Gear.

#### UPCO LIGHTING PLANT

Here's a dependable lighting plant that will run continu-ously without any attention ously without any attention other than supplying fuel and lubricating oil. And so dur-able that it gives years of service with practically no ex-pense. Built for boat service—it takes little room. Lights from generator 16 to 18 twenty watt lamps continuously. With generator and battery com-

bined capacity greatly increased. Write today for full details of Doman Engine and Upco Lighting Plants.

Doman Engine Division Universal Products Co. Oskosh, Wisconsin

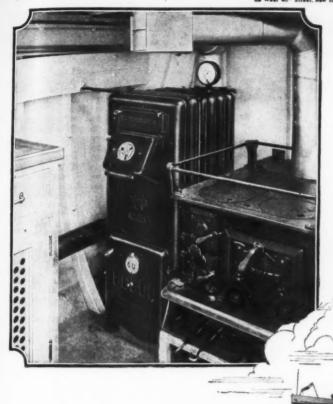


Upco 350 Watt Model W Lighting Plant for Boats. When writing to advertisers please mention Motor Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York

### America's Leading Marine Engine Builders

(Continued	frame	hane	2281

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Galley of the new Coast Guard Patrol C. G. No. 160, showing ARCOLA snugly installed and connected by pipes to American Radiators in the other quarters of the boat.

#### The coast guard patrol crews will be warm!

ARCOLA and AMERICAN Radiators specified for the entire fleet

ON DUTY day and night, patrol-ling the bleak, windswept shores for smugglers, the govern-ment has provided the crews of the new Coast Guard fleet with the same perfect radiator warmth that you yourself are probably enjoying at this very minute.

In the galley of each boat, next to the cooking stove, stands the ARCOLA heater, the same famous hot-water radiator heating outfit that is warming thousands of small homes and shops the country over.

If you use your boat for comare you use your boat for commercial purposes, the value of ARCOLA'S warmth is readily apparent. Or if yours is a pleasure craft, the warmth of ARCOLA and American Radiators makes possible longer service in the Spring and

Fall.

ARCOLA takes up little space — just the thing for a boat where compactness is all important. The radiators can be suspended out of the way along the bulkhead as shown in this picture below. We have an interesting book about ARCOLA that gives you all the facts. Simply send your name and address to the office below.

#### "I shall always specify ARCOLA'

says B. T. Dobson, Naval Architect

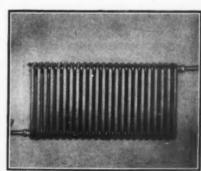
Before he learned about ARCOLA and its compact all-on-one-level radiator system, Mr. Dobson had always found the heating of boats always found the heating of boats extremely difficult. Afterinstalling ARCOLA in two small yachts, he writes, "Inthe future I shall always specify ARCOLA due to the extremely satisfactory results obtained in the past."

#### AMERICAN RADIATOR COMPANY

Makers of IDEAL Boilers and AMERICAN Radiators 1807 ELMWOOD AVE.. BUFFALO, N. Y. Sales Offices in all principal cities

RADIATOR HEATING OUTFIT

For small yachts and cruisers using internal combustion power



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#### The Coast Guard's Navy

(Continued from page 29)

laid with heavy planking, and the seams between each piece have been carefully filled with Jeffery's marine glue, which insures a permanently water tight deck. The choice of this material was unanimous among the members of the Committee

material was unanimous among the members of the Committee on purchase, which handled the joint supply program for all of the various boat builders engaged on this work.

Perhaps the most interesting feature about these boats is the power plant equipment, and the only company which bid on this item of equipment was the Sterling Engine Company of Buffalo. The contract called for the delivery of 350 engines of 300 h.p. each, and the engine was practically completely.

of Buffalo. The contract called for the delivery of 350 engines of 200 h.p. each, and the engine was practically completely designed and built in a period of 7½ weeks.

The program of the U. S. Coast Guard calls for a number of small boats for work around the harbors and inlets and 175 heavy 75 foot cruisers for off shore duty—these boats to remain at sea indefinitely. The boats carry a great deal of equipment including radio and with complete living quarters for the crew—likewise they mount a gun on the forward for the crew-likewise they mount a gun on the forward deck; which necessarily has to be reinforced. The nature of the duties and the continuous employment, made a heavier than usual boat imperative. Of course the displacement is more than the average 75 foot yacht. There was some question as to the longevity of engines of various speeds. A technical staff from the U. S. Coast Guard visited the various engine builder's plants, to consider first the experience of the company, with engines of the desired power; second, their facilities for producing the engine in the time required.

While originally there was a slight leaning toward lower speed engines, after a visit at the Sterling plant it was decided that the Sterling Company had ample experience in producing high power full load 1200 rpm engines, and various tests were witnessed, with the result that a speed of 1200 revolutions was decided upon. In a way, this decision will have an effect on the employment of power for heavy cruisers, in that it has been authoritatively decided that 1200 revolutions for heavy boats is perfectly practical where 600 revolutions had previously been employed, and it has been proven since that this propeller speed is efficient. The employment of the smaller and higher speed engines, reduce the the size of the engine room, and permits additional useful space in the boat.

The engines that influenced the Coast Guard technical staff imarily were the Sterling Seagull, and Viking engines. The former is a 4-11/16 inch bore, 6 inch stroke engine rated for ordinary duty at 150 hp at 1800 revolutions. This engine has

frequently operated in excess of 2500 revolutions. This engine has frequently operated in excess of 2500 revolutions without apparent effort, and so quietly that the observer cannot determine the speed without using a revolution counter.

The other model, the Sterling Viking engine, is a full load, 300 hp at 1200 revolutions engine of 7 inch bore, 8½ inchestoke. The Secretal presidence and the sterling of the s The Seagull engine was, however, too small for their purpose, and the Viking a trifle too large, since the calculations of the naval architects placed the requirements at 200 hp at 1200 revolutions, and it was necessary to bring out an all new design of an intermediate size. This the Sterling Engine Company in submitting their bid, offered to do. The desirable features that attracted the U. S. Coast Guard, and which were later incorporated in the new engine, included the counter-weighted balanced crankshaft, which is known to reduce bear-ing loads 55 per cent. In other words, engines constructed without counterweights, would have had 110 per cent higher bearing load. A special type of piston is employed, which practically reduces the hazard of scored cylinders. The water jacketing feature for the cylinders was another desirable enpacketing reature for the cylinders was another desirable engineering achievement, as the long water jacket, which is cast the full length of the upper crankcase, added stiffness and strength to the engine. The removable cylinder sleeves, inserted in this water jacket, were desirable from the standpoint of replacement and because they assured uniform cooling; possessing uniform thickness all around the cylinder barrel; which had a further effect of propaging the life of these which had a further effect of prolonging the life of these

Cylinders.

Dual Valves in the head are used because they permit the use of smaller valves which do not warp, and, retaining their use of smaller valves which dish efficiency of the engine. The seating assure the continued high efficiency of the engine. The consideration of single valves, to allow the same passage area for the gasoline into the cylinder, involves the possible loss of power through incorrect seating, also the single valves would weigh about one third more than a set of dual valves. Single valves in engines of this cylinder bore are probably not quite as efficient. The dual valves have decided advantages in engines of over 5 inches in bore. The overhead camshafts are employed. These are hollow and oil is driven through

them to lubricate the dual valve operating mechanism. them to lubricate the dual valve operating mechanism. All the driving mechanism for the camshafts and accessories are spiral bevel gears. These gears do not seem to wear out, and they are absolutely quiet in operation. All the gears were fitted to their respective shafts on splines instead of using a single key way and a key which sometimes at high engine speeds, and full load, has been known to work loose in the course of some months or a year or two of operation. spline method is permanent.

The same type of spiral bevel gears used throughout the engine itself are incorporated in a new principal of reversing gear, and this reversing gear reverses at engine speeds, noise lessly whereas the average spur gear reversing gear howls badly when the boat is backing up. The Sterling Company had likewise been working on a safety device, to prevent the hazard of backfires in a yacht. This feature too was included in the interconnecting of the carbureters in such a way that if the engine backfires, no flame seems to escape and several violent efforts at backfire, result in the engine shutting itself

The crankshafts of all these models are very large in dia-The crankshafts of all these models are very large in diameter. The Coast Guard engine was designed with 3-1/4 inch diameter crankshaft, with 7 main bearings. All the bearings for the crankshaft can be replaced through large hand holes provided on both sides of the upper crankcase. They are simply set into place, no shims being required to obtain an accurate adjustment. The absence of shims of course, requires the closest of machine work, and it necessitated the use of bronze back babbit lined bearings of the very highest grade of manufactures guaranteed within a twenty fifth of a grade of manufacture, guaranteed within a twenty fifth of a

thousandth of accuracy by the parts maker.

The engine is very symmetrical in appearance, and covers are mounted over all the operating mechanism; the flywheel reverse gear, and all accessories. Another feature of this engine is the gasoline supply system. For the first time a vacuum system has been correctly applied to a marine engine, enabling the engine to operate at full load. The design incorporates a small oil pump independently driven and this pump circulates oil to and from a small tank. The oil line is then tapped to utilize the vacuum in the line, and this vacuum being constant at all engine speeds, is used in connection with the regulation type of vacuum tanks to lift the fuel from the fuel tank, which may be at the stern of the boat, or at a point considerably lower than the carbureters. The greatest advantage lies in the fact that no metallic or moving parts come in contact with the gasoline, to cause friction hazard or to permit the fuel to seep out of the joints of the handling device and there need never be a single drop of gasoline in the bilge, with this fuel system.

this engine contributed nothing more than the fuel system and the safety precaution connected to the carbureters it would

have been a great advance in marine engine design.

The illustrations show the engines on test, and the remarkable thing about the test is that running at full load at 1200 revolutions the gasoline consumption was taken at .48 pounds on one and .46 pounds on another per bhp hour. This may mark a record for fuel economy for gasoline engines at this speed. Where this economy has been bettered in any type of engine, it has been done with considerable increase in speed, which has a tendency to reduce the consumption of fuel per hp. The oil consumption is likewise very economical.

The engines are regularly tested out and completely run in,

and each engine receives a final test of 6 hours at 1200 revolutions full load, in the presence of Coast Guard inspectors. Regularly a series of engines are selected from production and designated to go through a steady 48 hour run without stop. done with a great many of the engines has been

It is also been done with a great many of the engines without the slightest difficulty.

Standing out as the major point of this whole program is the confidence of the U. S. Coast Guard in allotting to Sterling engines the most difficult duty it had to perform. The performance of the several boats that have since gone into service has justified completely the commissioning of the Sterling Com-

pany to design and build these remarkable engines.

Production has reached a point where deliveries may be made for individual use. The present series are all 1200 rpm 200 ho engines. Other engines will be likewise available shortly with compression suited to full load at 600 revolutions, to develop 100 hp; also for 150 hp at 900 revolutions. These engines are built with iron crankcases and weigh about 4100 pounds. A special express cruiser model, built with aluminum crankcases weighing about 3500 pounds will deliver around 300 hp at 1500

## WESTON Tachometer



#### A Superior Speed Indicator For Yachts and Motor Boats

The Weston Tachometer may be installed on any marine engine or driven from the propellor shaft by means of gears, belt, sprocket chain or flexible shaft as conditions require; connected to an indicating voltmeter, calibrated to read in R.P.M. or KNOTS PER HOUR as desired.

SIMPLE. The armature is the only moving part in the Tachometer and runs in ball bearings so that the wear is very slight. The only attention required is an inspection and cleaning once a year or at longer intervals depending on the conditions of service.

RELIABLE. The Tachometer is especially designed to stand up under severe conditions, encountered in marine service. The parts are rugged,

of the best materials and are enclosed in a moisture proof pressed steel case.

ACCURATE. This Tachometer is guaranteed to be accurate within 1% at all times, if properly installed. Under severe tests at our laboratories no change in the accuracy of its indications was noticed after over three years continuous operation. All adjustments are made before the apparatus leaves

the factory. It is not affected by temperature

One or more indicators can be placed in any part of the boat and connected to the Tachometer by means of cables. This is a distinct advantage in large yachts where it is desirable to have a speed indicator on the bridge or in the pilot house as well as in the engine room, and in some cases, the owner's cabin.

This Tachometer is made by the manufacturers of Weston electrical indicating instruments. And Weston Electrical Instruments are standard the world over. In scientific laboratories, power houses, factories, universities and industrial plants, Weston is acknowledged the best. Weston was the pioneer and leader. And for 36 years, this leadership has been maintained in every branch of the electrical industry.



Bulletin 3004 giving full information on the Weston Tachometer, will be sent upon request.

WESTON ELECTRICAL INSTRUMENT CO., 28 Weston Avenue, NEWARK, N. J.

Electrical Indicating Instrument Authorities Since 1888

## WESTON

STANDARD - The World Over

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## New 36 Foot O. A. Coast Guard Picket Boat Designed and Built by Nock FOR The United States Coast Guard

This boat is one of five we built for the Government. The principal dimensions are 36 ft. by 8 ft. 4 in., by 2 ft. 6 in. Planked with Philippine Mahogany. Powered with a 6-cyl. 5¾ x 7 Model M. R. Speedway which develops 180 H. P. at 1300 R. P. M.

#### NAVAL ARCHITECTS AND YACHT BUILDERS

Frederic S. Nock, Inc.,

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Shelf Binnacles of mahogany or brass.

Pedestal and Stand Binnacles of all types and sizes.



The Renowned WALKER
"EXCELSIOR" Yacht Log.
In knots or statute miles.
An instrument of precision.

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KELVIN-WHITE PILOT GLASS



Our "Pilot" Glass is the best and handiest on the market. Complete in leather case with strap \$15.00

Also "LEMAIRE," "LIV-ERPOOL" and "ZEISS" Prism in many sizes and styles.

Compasses Adjusted in Any Port and the work guaranteed



H OW fully is your boat protected against loss by fire? Since the introduction of the LUX System it no longer becomes necessary to depend upon hand extinguishers. LUX places an entire compartment under an inert atmosphere of carbon-dioxide gas, thereby smothering the fire at all levels inside of 20 seconds. LUX is the only system which will extinguish a fire resulting from an explosion. Our system can be used on any size boat.

It is equally effective under all ranges of temperature. There is no maintenance and it requires no replacement until used. It is non-corrosive, thus incurring no damage either to boat or engine. The LUX System is simple

to operate and moderate in cost.



278 Coast Guard Boats are LUX Equipped

The Coast Guard Service, realizing the dreaded fire hazard aboard boats equipped with gasoline motors, have protected the motor room of each new Fatrol Boat with the LUX System. In addition to motor rooms, tank spaces, galleys, or any other compartment may be LUX protected.

HAVE OUR ENGINEER SURVEY YOUR BOAT



140 Cedar Street

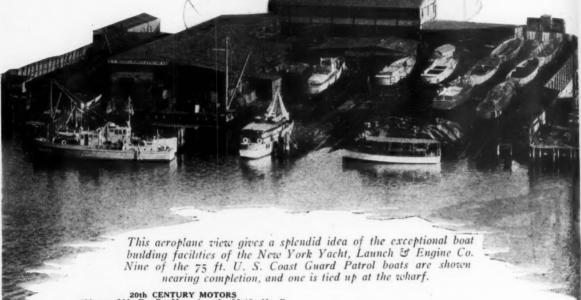


& COMPANY, INC.

New York, N. Y.

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## Yacht, Launch & Engine Co.



20th CENTURY MOTORS
400 to 500 R. P. M. 4 cyl. 50-60 H. P.
Heavy Duty Type
Four cycle. Bore 6½" 6 cyl. 75-100 H. P.
Stroke 8½"

The C G 160, the first of ten 75-ft. boats we are building for the United States Coast Guard Service

and one of a fleet of 175 which will patrol the sea-board on errands of mercy as well as law enforcement.

PERUSAL of the pages in Lloyd's register shows that many of America's fine yachts and houseboats were built by us. And their owners are men whose fame as vachtsmen is known abroad as well as in the United States. Many of them have owned two or more boats each of which was a New York, Yacht Launch and Engine craft.

N. Y. YACHT, LAUNCH & ENGINE CO.



Advertising Index will be found on page 304

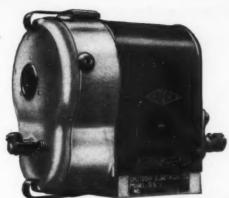
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Splitdorf Model SS Magneto

## a tribute

Splitdorf SS type Magnetos are specified for the Coast Guard boats, engined by the Sterling Engine Company, that were authorized by the Government for off-shore duty.

In itself, this is a telling tribute to the never-failing dependability of Splitdorf Magnetos—the ignition that insures:

The easiest possible starting at

lowest cranking speeds;
A hot, fat, sizzling, never-failing
spark that just CONSUMES the
mixture and minimizes carbon

deposit; and Absolute protection against oil, dust, grease and the natural ac-cumulations found with the best kept motors.

#### SPLITDORF ELECTRICAL CO.

392 High Street New Jersey

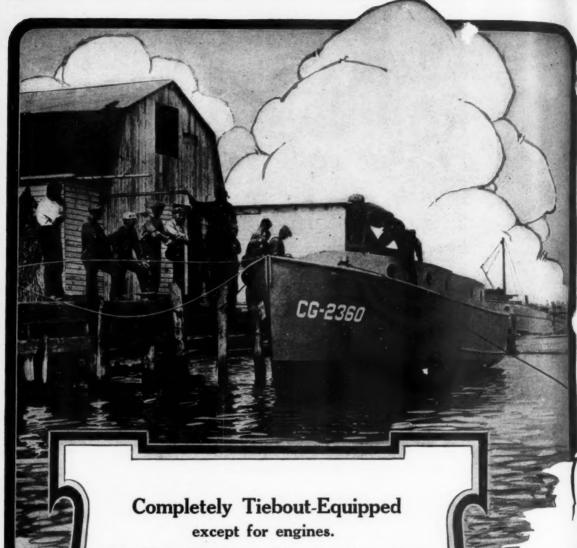




Splitdorf Product

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The U. S. Coast Guard Service selected Tiebout standard equipment for its fleet of seventy 36 ft. Picket Boats. Everything except the engines taken right out of stock.

Our display at Booths 19 and 20, Motor Boat Show for 1925, will demonstrate our reputation for the most comprehensive stock of dependable marine equipment anywhere.

Established 1853

Incorporated 1892

#### W. & J. TIEBOUT

118 Chambers St., New York.





# Elco's Surprise at the Show



## A Big Able Seaworthy Elco Cruiser for Less than Two Thousand Dollars

ELCO'S Surprise at the Show is the first complete Cruiser of modern design and construction to be offered at approximately the same cost as a medium price automobile. Furthermore you can purchase this boat under our new finance plan as easily as you can buy a car.

The new Elco is a class 1 cruiser, a twenty-six footer with attractive lines, thoroughly seaworthy, and built for comfort. It has ample sleeping accommodations for four persons, galley, sink, fresh water tanks and separate toilet. You couldn't ask for more "livableness" in a boat of its size.

A real boat backed by a real company with real service.

The cockpit is large and roomy, with awning, and all steering and engine controls on the bulkhead. With a 16 horsepower engine the speed is 9 miles per hour and the fuel expense negligible. Electric starter, generator and full electric equipment.

It's a boat you'll be proud to own, handsome in appearance, easy to handle and inexpensive to run.

Many a yachtsman who has owned larger boats will find the Elco Twenty-Six meets 95% of his boating requirements.

The Elco Works

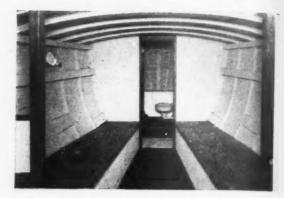
Port Elco, Division of Sales and Exhibit 247 Park Avenue and 107 East 46th Street Telephone Vanderbilt 2320, New Yo-k City Works: Bayonne, N. J.







Stern view of the Eleo Twenty-Six showing the large roomy cockpit with its protecting awning



The cabin of the new Elco Twenty-Six is roomy, comfortable and complete for a party of four

THE new Elco Twenty-Six, like the other famous Elco Cruisers, is something more than a vehicle of transportation; it is a home afloat. Unlike a motor car, it is an asset upon which you can realize a substantial portion of its original cost, even after several years of use.

Decide now to own one of these standardized Elco boats next summer. You'll find boating the king of sports, and Elco the king of cruisers.



Port Elco, in the heart of New York's hotel and shopping district, at 247 Park Avenue and 207 East 46th Street, adjoining Grand Central Palace where the Motor Boat Show is held

At Port Elco, conveniently located in the heart of New York City you can inspect the new Elco Twenty-Six, as well as the other Elco standardized cruisers; the 30 foot Veedette, the Cruisette, the Forty-Five and the Fifty-Six. Experienced yachtsmen in charge at Port Elco will be glad to advise you about boats and boating, and explain details of the Elco purchase plan and Elco Service.

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# Elco's Surprise at the Show



#### A Big Able Seaworthy Elco Cruiser for Less than Two Thousand Dollars

ELCO'S Surprise at the Show is the first complete Cruiser of modern design and construction to be offered at approximately the same cost as a medium price automobile. Furthermore you can purchase this boat under our new finance plan as easily as you can buy a car.

The new Elco is a class 1 cruiser, a twenty-six footer with attractive lines, thoroughly seaworthy, and built for comfort. It has ample sleeping accommodations for four persons, galley, sink, fresh water tanks and separate toilet. You couldn't ask for more "livableness" in a boat of its size.

A real boat backed by a real company with real service.

The cockpit is large and roomy, with awning, and all steering and engine controls on the bulkhead. With a 16 horsepower engine the speed is 9 miles per hour and the fuel expense negligible. Electric starter, generator and full electric equipment.

It's a boat you'll be proud to own, handsome in appearance, easy to handle and inexpensive to run.

Many a yachtsman who has owned larger boats will find the Elco Twenty-Six meets 95% of his boating requirements.

The Elco Works

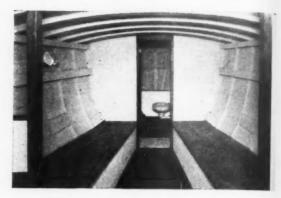
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## The Perfect Electrical Connection

STANDARD TYPES











#### TERMINALS

For Your Marine Motor-Your Car-Your Radio

How often do you trace ignition trouble to faulty connections? Almost every time. Is it worth while to put up with this annoyance when for a very small cost and in a few minutes you can correct this trouble for all time by using Rajah Solderless Terminals on every wire of your motor and ignition instruments. To attach simply strip insulation back about 3/16", insert wire in ferrule and screw down pointed part as shown in illustration. It can't shake loose or come apart but you can detach it imme-

Rajah solderless terminals and standard terminals are used by manufacturers of the best internal combustion engines for marine, automotive and industrial service, magnetos, etc.

#### RAJAH SAFETY NIPPLE



Rajah safety nipple. Price 15:

dealer does not carry them.

A flexible rubber nipple that fits over any plug, terminal or coil connection, and gives protection against moisture, water and shock. Mil-lions of them have been sold. Is it Rajah safety nispis. Price 15c any wonder when you think of the great service and how little it costs. Order from us if your SOLDERLESS TYPES









Rajah Ring Pri-

#### -RADIO SOLDERLESS TERMINALS



Increase the selectivity, volume and reception of your radio and cut out the noises by making every connection absolutely rigid with Rajah Radio Solderless Terminals. These terminals are made on the same principle of the famous Rajah Solderless Terminals for engines, magnetos, instrument boards, etc. Once the connection is made it cannot shake or come loose. Connects and disconnects like a snap fastener.

For radiator ground connection simply take out screw in radiator valve handle, put screw through hole in base stud of the Rajah Solderless Terminal, and attach to radiator. Then fasten the ground wire in Rajah Snap Terminal by stripping wire scant 3/16". Insert wire into ferrule then screw Snap Terminal into other end of ferrule, and the wire is absolutely fast. Push Snap Terminal now fastened to wire, on the radiator base stud. It snaps into place making a positive electrical connection and instantaneous operation. Extra studs are sold for making ground connections in various places.

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with a secure connection, better than any switch.

Price complete—snap fastener and base stud (ground or panel style) 20c.

Base studs only 6c each.

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Boatmen's Favorite for Twenty-one Years

COR marine service there is only one spark plug that's best. Of course, it's Rajah. Best because it's made particularly for boat service.

Rajahs not only improve engine performance by greater power, easier starting and faster acceleration, but they last longer and make ignition absolutely sure.

For open boats and outboard motors use the waterproof type Rajah—the only successful waterproof plug made. The porcelain is protected by a sturdy cap of moulded condensite. A flexible rubber nipple above the cap encloses the terminal and extends back over the cable.

Rajah plugs are standard factory equipment on many of the widely known marine engines. drivers prefer them.

Go to your dealer today and buy a complete set of Rajah Plugs for your engine. For outboard

motors and open boat service ask for the water proof type; for cruisers and protected motors get Rajah standard type plugs.

If your dealer cannot supply you, order direct from us, stating thread or make of motor



BLOOMFIELD

Waterproof

Shock Proof

Break Proof

Price \$1.25

All Threads

**NEW JERSEY** 

Advertising Index will be found on page 301

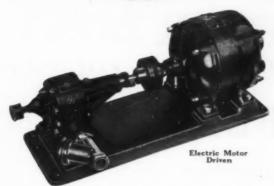


Giant Rajah Plug Price \$1.25 All Threads

## A-M-F ROTARY CIRCULATING BILGE PUMPS

The Zenith in Pump Perfection





#### A-M-F Electric and Engine Driven Pump

HERE is a Rotary Bilge Pump of superior design, embodying many excellent and advanced features. It can be supplied direct connected to a standard speed electric motor of any voltage, or with a suitable gasolene engine, thereby eliminating the use of reduction gears or belts.



The Pump is practically noiseless and discharges without pulsation. The A. M. F. Pump is very desirable for the discriminating boatman. It may be used for pumping bilges, tanks or for flushing decks. The set is small, self contained and portable.

The base of the gasolene engine driven pump forms a reservoir for sufficient fuel to run the engine for seven or eight hours.

A complete set consists of a Pump, coupling, power drive and strainer, mounted on a base.

Write today for detailed specifications and illustrated literature.

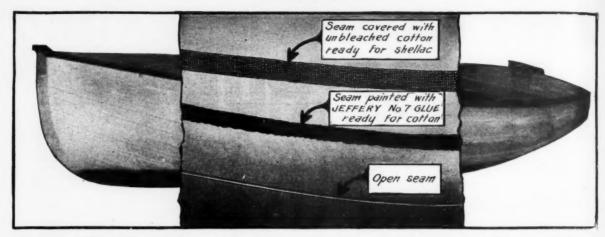
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Presentation



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LET US TELL YOU ABOUT

### JEFFERY'S

WATERPROOF

## MARINE **GLUES**



Jeffery's Waterproof Marine Glues are for sale at all Yacht, Boat and Canoe Supply Houses, Hardware, Paint, Oil and Sporting Goods Dealers.

Study the enlarged section of the above illustration, it shows how easy the hull seams of a boat can be made watertight at a very little expense, with Jeffery's Waterproof Marine Glue.

The lower seam is shown open, as usually is the case when a boat is laid up during the winter, the middle seam is shown painted with a coat of our Jeffery's No. 7 Marine Glue ready for the cotton fabric, which is laid on the glue and ironed into it with a warm flat iron as shown on the top seam. The cotton is given a coat of shellac and painted. When the job is completed according to these directions the patching strips can scarcely be detected.

We however believe and earnestly recommend that if a more permanent result is desired, the entire surface be covered with fabric, laid with our Jeffery's No. 7 Black soft quality Marine Glue. will insure a boat with a coat of paint once a year being absolutely watertight indefinitely.

#### PUT YOUR LEAK TROUBLES UP TO US WE WILL STOP THEM

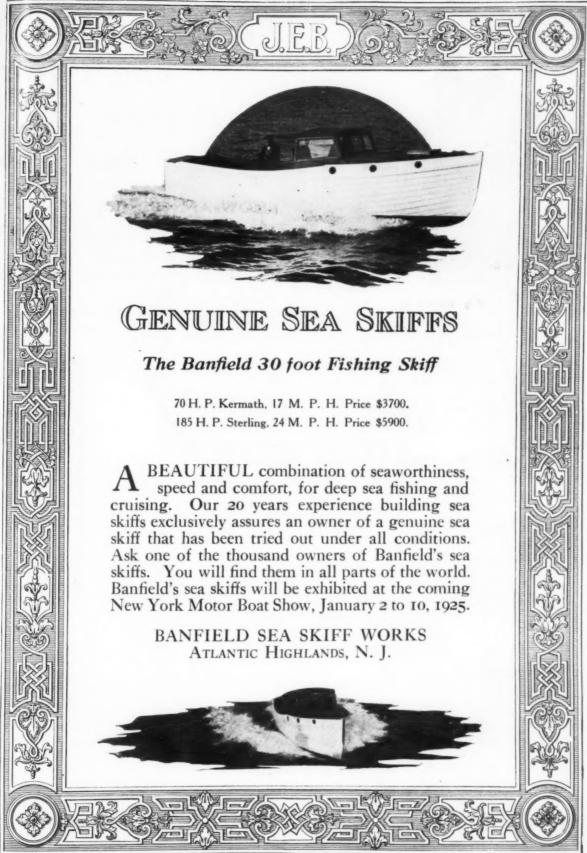
Write today for booklet, "How to Make Your Boat Leakproof" and "Marine Glue; What to Use and How to Use It." of this coupon at our booth (No. 67.)
at the 20th Annual
Motor Boat Show, New
York City, Jan. 2nd to 10th,
will entitle you to a sample of
JEFFERY'S MARINE GLUE.

"Ask for samples at our Booth No. 67 at the Motor Boat Show."

#### Ferdinand

152 Kneeland Street

Boston, Mass.



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# The Better the Paint the Better the Job

#### SHOW ANNOUNCEMENT

We extend a cordial invitation to our friends to visit our booth No, 34—Mezzanine Floor—at the Annual

MOTOR BOAT SHOW

JANUARY 2d to JANUARY 10th, 1925

AT

GRAND CENTRAL PALACE, NEW YORK CITY



## "New Jersey"

PAINT & VARNISH MAKERS SINCE 1889

Top and Bottom Paints for Everything that Floats



- "NEW JERSEY" COPPER PAINTS are made to resist teredos and marine growth, and they produce a finish that will increase the speed of your boat.
- "NEW JERSEY" YACHT WHITE has been specified and used on the largest and finest yachts afloat. Retains its whiteness and will stand scrubbing.



"NEW JERSEY" SPAR VARNISH will stand up under all kinds of weather conditions, hold its lustre and give absolute satisfaction.

Write for the booklet - DAVY JONES LOCKER - giving valuable information on painting, sent without cost to you.



REG. TRADE MARK

Sold by all
Leading Dealers
or Write
Direct to us.

#### NEW JERSEY PAINT WORKS

Harry Louderbough, Inc.

Advertising Index will be found on page 304

Wayne & Fremont Streets, Jersey City, N. J., U. S. A.



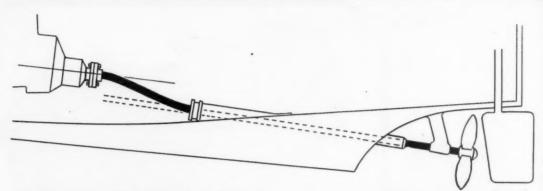
Everybody likes the Dunphy Sand-Dab, because it does everything that everybody expects in an all-purpose boat. It's a trim, fleet motor craft that has proved itself by every performance. It's steady and seaworthy on the big, wide lakes—yet built to slip lightly over bars and shallows—to ease into coves, bays and rivers where others cannot enter. The Sand-Dab is the boat of boats for all whose pleasure is the water. In brief, here is the Sand-Dab:

Length'18-feet. Four-cycle Universal Motor placed amidship. Electric lights and starter if desired. Auto steering wheel—handles as easily as a good motor car. Draws only 11 inches. Beaches anywhere, the propeller is protected. Makes 12 miles an hour easily. Room for eight passengers. Constructed with all the care, skill and precision of true craftsmanship—yet attractively priced to meet popular demand. Only Dunphy builds the Sand-Dab, an exclusive creation of the company that has been famous for boats for forty years.

Write for illustrated catalog which contains prices, specifications and complete information on the Sand-Dab, launches, outboard motor boats, outboard motor canoes and other boats made by Dunphy. Or if you want a special purpose craft or a particular design, send us your specifications. For many years we have designed and built boats to owner's specifications and are equipped to serve you to your entire satisfaction.

DUNPHY BOAT MFG. CO.
Dept. C3
Eau Claire, Wis.





#### Don't Make Your Engine Work Like This

Of course the misalignment up there is exaggerated but the condition shown is slowing down thousands of boats—maybe yours?

Such misalignment is almost bound to take place:

- (a) When a new hull is launched—the hull is supported differently.
- (b) When a new hull swells on absorbing water.
- (c) When a hull encounters rough water.

The mere installation of a pair of universal joints like the one shown below has been known to increase the power available at the propeller 17%.



#### SELECT YOUR UNIVERSAL JOINTS FROM THIS TABLE

If Angle of Operation is more than 10°, consult us.

SIZE OF JOINT		H.P. CAPACITY AT 1000 R.P.M.	LENGTH SINGLE JOINT	DIA, OF CIRCLE FOR SWING	APPROX. WEIGHT
B-1	11/4"	13	71/2"	45/8"	7 lbs.
B-2	11/2"	26	71/2"	53/4"	11 lbs.
B-3	17/8"	34	81/2"	61/4"	18 lbs.
B-4	17/8"	41	81/2"	6 13/16"	20 lbs.
B-5	21/8"	62	101/2"	7 3/16"	30 lbs.
B-5	25/8"	62	131/4"	7 3/16"	35 lbs.

#### **Blood Brothers Machine Co.**

Pioneer Makers of Universal Joints

ALLEGAN

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If your marine supply dealer or boat builder does not carry Blood Universal Joints in stock, write us for prices and name of nearest dealer



# OW

CAILLE 5-Speed

Lightweight

Here's the latest in rowboat motor engineering achievements—a lightweight vibrationless motor with the famous Caille 5-in-1 propeller. Easily carried, a marvel of power, perfectly balanced and easiest to control.

The only twin rowpoat motor that can be started in neutral like an automobile. No load resistance on propeller wheel-therefore, instant, easy starting.

Permits starting motor with boat tied to dock. Drives a boat at perfect trolling speed. Can be reversed without turning propeller assembly or turning motor completely around.

All this is done by merely shifting steering handle-safe-simple-efficient and dependable.

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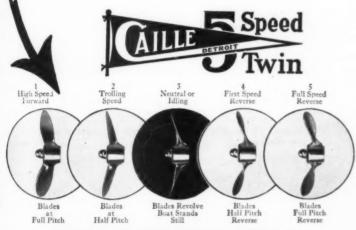
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It's Fl	REE!
Use This	Coupon

The Caille Perfection Motor Co. 6314 2nd Boulevard, Detroit, Mich.

Gentlemen: Please send me your catalog showing Complete Line of Caille Rowboat Motors including the Caille Liberty Direct Drive and the CAILLE LIGHTWEIGHT 5-SPEED TWIN.

Address ..

My dealer's name is .



THE CAILLE PERFECTION MOTOR CO.

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Detroit, Michigan

oatMotors

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The Ara," a palatial steel yacht, 211' 9" x 31' 3", owned by Mr. W. K. Vanderbilt, is waterproofed with Kuhls' Elastic Scam Composition

# KULLS'E LASTIC SEAM COMPOSITION

IT is the accepted truth that a boat is as sea worthy as its weakest seam, and that a weak seam is more usually caused by poor quality filling composition or none at all. For filling deck and plank seams of motor boats, yachts and steamships you will not find a better or more satisfactory filler than Kuhls' Elastic Seam Composition—the experienced boatman knows this and that's why he will use no other.

One filling of Kuhls' Elastic Seam Composition lasts eight to twelve years and longer. It becomes semi hard but never brittle, adhering tightly to the sides of seams and retains the original elasticity through many years of severe service.

The elasticity causes it to give with the twisting and bending of the hull and to compensate for the swelling and shrinking of the planking. Weather extremes have no effect on Kuhls' Elastic Seam Composition.

It is widely used by motor boat, yacht and ship builders, U. S. Government and thousands of amateur boat builders.

Five colors—White, Gray, Yellow, Black and Mahogany Carried in stock by marine supply dealers, ship chandlers and hardware dealers.



#### Other Kuhls' Marine Specialties

Elastic Flat Yacht White Elastic Glazing Composition
Elastic Gloss Yacht White Elastic Deck Varnish
Elastic Trowel Cement

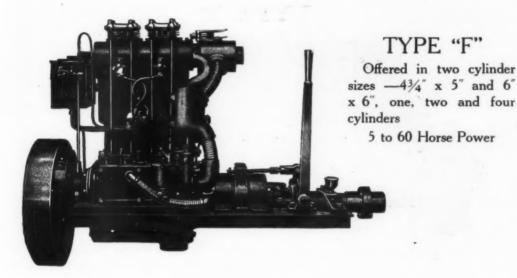
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Sixty-fifth Street and Third Avenue

Established 1889 Brooklyn, N. Y.

ALVE-IN-HEAD MOTOR



Model FB2, Two Cylinders "The Frisbie Special"

10-14 Horse Power Designed Speed, 600 to 750 R. P. M. Bore, 43/4"; Stroke, 5" \$475.00

#### Four Cylinder Models

MODEL FE4 30-42 Horse Power Designed Speed, 800 1200 R. P. M. Bore, 43/4"; Stroke, 5"

MODEL FF4
42-60 Horse Power
Designed Speed, 6
900 R. P. M.
Bore, 6"; Stroke, 6"

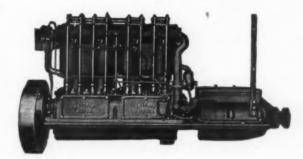
All Type F motors have: Valves-in-Head in removable cages; helical cut timing gears, quiet, hardened and ground steel roller tappets; nickel steel crank shaft, cam shaft and connecting rods and removable die cast main and connection rod bearings; force feed oiling system, carrying oil to cylinders and main bearings, and direct to connecting rod bearings through drilled crankshaft.

#### Single Cylinder Models

MODEL FAI Bore, 41/4"; Stroke 5"

MODEL FCI 5-7 Horse Power
Designed Speed, 600 to 750
R. P. M.

8-10 Horse Power
Designed Speed, 600 to 700
R. P. M. Bore, 6"; Stroke, 6"



# The Frisbie Motor Company, 7 College St., Middletown, Conn.

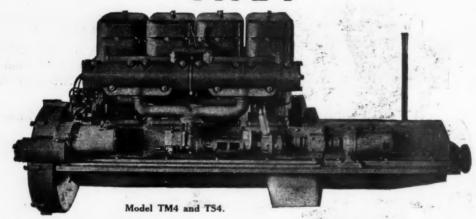
Manufacturers for over 20 years of overhead valve gasoline and kerosene engines for the propulsion of boats.



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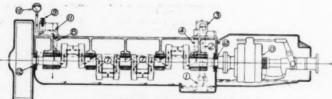
# FRISBIE

VALVE-IN-HEAD MOTOR
TYPE T



Two, four and six cylinders—6" Bore—20 to 185 Horse Power

MODEL TM4, FOUR CYLINDERS 50-75 H.P., 600 to 900 R.P.M. MODEL TS4, FOUR CYLINDERS 100-125 H.P., 1200 to 1500 R.P.M.



THE MODEL T OILING SYSTEM
and the Five Bearing Nickel Steel Crankshaft

PRESSURE FEED OIL
DUAL OVERHEAD VALVES
REMOVABLE HEADS
HOT SPOT MANIFOLD
REAL ACCESSIBILITY

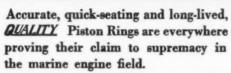
A NEW SMALL RUGGED FOUR CYLINDER ENGINE by FRISBIE will appear at the N. Y. Motor Boat Show
Block "E," Main Floor

THE NEEDED MEDIUM SPEED MOTOR FOR EVERYBODY'S CRUISER

The Frisbie Motor Company, 7 College St., Middletown, Conn.

Manufacturers for over 20 years of overhead valve gasoline and kerosene engines for the propulsion of boats.





More and more builders of marine motors are specifying *QUALITY* Piston Rings for original installation.

And more and more users are learning the advantages of employing *QUALITY* Piston Rings for replacement.

That is why we are shipping "Over two million a month."

The RING COMPANYS

Muskegon, Michigan

# **Piston Rings**



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#### Necessities

(Continued from page 38)

Coherent expression always failed him at such moments. This inability of his to grapple with simple fundamental problems had always puzzled him. To the problems of business, his mind reacted, swiftly enough. He held his position in the bank on the strength of his common sense judgment.

With his right hand grasping the banister, he dragged him-

with his right hand grasping the banster, he dragged himself up the stairs to his room, and began packing his bag for his week end cruise in the yawl.

His task finished, he crossed to the window and looked down into the garden. The shadows of the trees lay sharp and black upon the moon-flooded lawn. There was a pool with a small fountain and benches in secluded nooks, that looked more secluded now, in the moonlight. It was a trim, well-kept garden—but it was not kept trim by himself. Not a single inch of it knew the touch of his own hands. He had denied himself the personal care of this little garden, the only spot

of earth he owned in the whole, wide world.

And why? Because digging a garden was beneath the dignity of a rising young banker!

Nearly three hundred dollars of his yearly salary was paid out to a gardener for a few hours work each week. The hire out to a gardener for a few hours work each week. The hire of this gardener was more than a mere pecuniary loss. What Vance lost in denying himself the intimate contact with the earth, his mother, was debited against him ineradicably, he knew, in figures of sleepless nights and jaded nerves.

There came to him the sharp realization that the best years of his life were lost in his desire for possessions, which once

of his life were lost in his desire for possessions, which once attained did nothing but clutter his existence, and had ended up by possessing him. He was not in any sense a rich man. His total assets amounted to little more than the yearly salary of Halliday, the great president of the Oil and Grain Commercial Bank. Still, he was what is known as in "comfortable circumstances!"

He smiled, bitterly as he thought of this garbled phrase. No one knew better than himself the falseness of it. In the strug-gle for possessions he had lost the one thing that made life

gle for possessions he had lost the one thing that made life worth while—the love and respect of his own.

Early in his married life he had promised himself wonderful hours with his children, particularly with the boy, Marshall. But somehow these plans had never materialized. Something had always come up to thwart his plans. At first it had been a house, contracted for at a price far beyond their means. He a noise, contracted for at a price far beyond their means. He had been a junior teller, then, on a salary of eighteen hundred a year. To help pay for the house, he had taken extra work at night. The habit once established, he had kept it up, and because of this extra earning capacity, and urged by his wife,

he had undertaken more and more.

His promotion six years ago to assistant cashier had been the signal for the move to this large, expensive establishment, in a neighborhood where he couldn't plant a rosebush without losing caste. His promotion to the cashier-ship, due almost any

rime, now, would be, he knew, the excuse for yet another move.

And, thus by one thing and another, fate had contrived to bar him from the companionship of his family. As the years progressed and the edges of his "nerves" began to show, the alienation became complete. His flashes of temper were more and more frequent.

(Continued on page 272)

#### Beneath the Southern Cross

(Continued from page 43)

stead, just as the churchbells were ringing for Easter services. We created a tremendous sensation here, the populace running along the cliffs in wild excitement, waving their arms and shouting. Later we learned they had believed us to be a whale, belly up, when they had first sighted us, and the speed with which we arrived had astonished them.

which we arrived had astonished them.

Though the boat rolled badly in the heavy groundswell of the anchorage, we all turned in for some much needed sleep. Above the town of Orangested, the red, white and blue flag of Holland floated above the ramparts of Fort Orange. This

fort was the first of any nation to salute the American flag, and got in trouble with the British for doing so.

We awoke in the late afternoon and went ashore. The road

to the town led up a steep incline, at the top of which we were met by a Dutch soldier in a toy-like uniform who escorted us through the quaint streets and the quainter fort. My Dutch name was very much in favor in this little outpost of Holland.

name was very much in favor in this little outpost of Holland, and we were treated with the utmost courtesy. We went to church in the evening, where the minister preached an excellent sermon. In it he made especial reference to us, alluding to those who trusted their lives in frail craft on the great seas, so should we put our trust in God when sailing the great sea of life. We paid for our supper in guilders, and thus had more coins to add to the collection. To bed under a beautiful full moon, with the crater of Statia

towering above us, and the sea booming on the rocks.

The next day, through more heavy seas, we crossed to St. Kitts, where we found another open roadsted where the little Nepenthe II rolled horribly at her anchorage.

I am sorry to say we did not like St. Kitts, the only island in the West Indies that we didn't. Scenically it was very lovely. Its volcano, Mt. Misery, towered to the skies, its peak in the clouds. We took an auto and drove around the island, passing many sugar factories and the famous fortress of Brimstone Hill, the scene of a fierce siege in the days when the French and English battled for possession of the island. Wild monkeys abounded in the High Woods, we were told, descendants of pets brought there by the British, and we were invited to go on a hunt, but declined. go on a hunt, but declined.

It was the natives who soured us on St. Kitts. A more insolent, foul mouthed lot it has never been my ill fortune to behold. Wherever we went they shouted and cursed at us, calling us white trash and insulting us in every way they knew how. We would have knocked them down where they stood, calling us white trash and insulting us in every way they knew how. We would have knocked them down where they stood, had we not been warned previously it might land us in jail with all sorts of complications. How the English there and in Jamaica can stand the insults from the black race they do, is more than I can figure. They must be without manhood. In no other island under English rule did we see anything like it. Elsewhere every native was polite and courteous. Perhaps the St. Kittonians will say, "If you don't like our island, you needn't come here!" We never shall again.

A charming Englishman, Mr. Bromley, gave us cocktails in the Club at Basse Terre and he was the one bright spot amidst some very black natives.

some very black natives.

(Continued on page 272)

#### Adastra in the Channel Isles

(Continued from page 46)

southwest except where a villainous pile of rock out-lies it. A submerged ledge makes out from the northern side of the bight and interrupts the flow of the rapid tidal stream, setting up different water levels above and below it.

But the ledge forms an eddy at Les Laches and in this eddy we found a dozen local fishing boats riding uneasily to moorings. Jetties projecting from the shore produce the inner harbor of Le Creux, which is big enough for a small steamer to warp into. Being tidal, Le Creux dries partially at low water. The scenery round about is rugged and forbidding, and on entering for the first time one can already hear the algorithm.

water. The scenery round about is rugged and forbidding, and on entering for the first time one can almost hear the elements shouting, "Anchor at your own peril."

From this ominous description of the best harbor on the island of Serk one might well suppose that the next paragraph isiand of Serk one might well suppose that the next paragraph will record the total destruction of the yawl Adastra; but the worst has already been told. At Elliott's direction we made fast to the warping buoy that is used twice a week to help the Guernsey steamer between the breakwaters, and within the hour Barkham had a stern line out to a ring bolt ashore, and Adastra was looking toward the sea.

Adastra was looking toward the sea.

Serk is unprepossessing from the water, but its interior is a gem of rare beauty. The smallest of the four principal islands of the Channel group, it is only three and a half miles long by a maximum of one and a half miles wide; but each foot of its two square miles contributes its quota of picturesqueness, austerity, or melting charm. The road from Les Laches leads through a tunnel cut under the cliff centuries ago, and

leads through a tunnel cut under the cliff centuries ago, and then winds steeply to the summit of an undulating plateau. Our first visit ashore was only for the purpose of getting pictures of Les Laches while the light was still good; but from the top of the cliff we gained a panorama that was well worth seeing. To the southeast the isle of Jersey; to the west Guernsey and Herm; to northward the Casquets, faintly discernible, and Alderney; and from northeast around to east. glimpses of the coast of France—from all of which it will be gathered that the weather is not always foggy on the south gathered that the weather is not always foggy on the south side of the Channel.

After dinner on board, P. L. and I put off again and walked west and south to La Coupée. Its top, along which a roadway runs, is less than ten feet wide. On the west it slopes abruptly to the sea, and on the east side is a sheer drop of nearly three hundred feet. Another century or two, which is nothing in the life of Father Neptune, and La Coupée may

nothing in the life of Father Neptune, and La Coupee may be no more than a memory.

There are other natural wonders on Serk, including a cave where Victor Hugo might have derived his local color for Giliatt's battle with the octopus, but it was ten o'clock and growing dark when we turned back from the causeway. Barkham had come ashore with us on a special search for cream, and on the way to the anchorage we overtook him, pitcher in hand. Whatever might happen in the night, we meant to have oatmeal for breakfast.

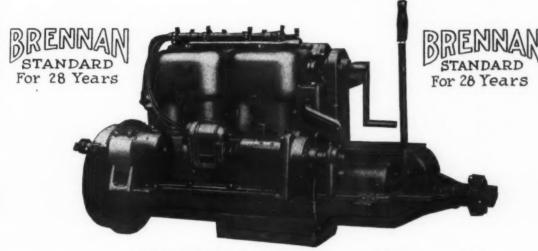
The night passed with some rolling, and I was up once and

The night passed with some rolling, and I was up once and Barkham twice to see that we were not being taken unawares

(Continued on page 276)

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#### Outboard Motoring Through the Panama Canal

(Continued from page 50)

but riding the open sea in a fifteen foot boat is a real treat for the fellow who enjoys a bit of adventure. If one is not susceptible to seasickness, there's no sport to compare with it.

We soon rounded the Balboa Breakwater, and started into the great inter-oceanic ship canal. Now, before going to Panama, I'd read a great deal about the Panama Canal. I'd seen pic-I'd read a great deal about the Panama Canal. I'd seen pic-tures of it, and motion pictures too, but certainly no written or pictured description of this Titanic engineering feat can give any adequate conception of it. Between the entrance from the Pacific Ocean, and Mira Flores Lock, the canal is 500 feet wide. Its shores are grown up with jungles of tropical vege-tation, and it has far more the appearance of some natural river than of a ditch dug by human effort. This river-like naturalness was further increased by the fact that we had en-tered the canal during the ebb tide of the Pacific Ocean. It should be mentioned here that the tides on the Pacific side of the Isthmus of Panama vary water surface levels from 17 to 22 feet. Naturally, when these high tides begin to ebb, the waters of the Canal below Mira Flores Lock slack off with the tide levels of the ocean. The Pacific end of the canal is then pouring out to sea. As we entered, it was going out so fast that the current thus created was about all that our little motor could push against. Our progress was very slow over the first mile into the canal, but the current kept getting less as we neared the locks. Eventually we overcame the current, and sent the bow of the little boat into the lower chamber of Mira Flores Lock just as the steamer Favorite, a Panama Canal tug, entered. Favorite was taken in tow by the steel mules, and after she had been berthed in the lock chamber, we went alongside, and made fast.

We made fast to the steamer because it gave us the obvious advantage of rising with the ship when the lock would be flooded. Now, these locks in the Panama Canal are rather sizeable things—in fact, they're the biggest locks ever conceived by man, and one's previous conceptions of canal locks must be put into the discard unless one is already familiar with the locks of Panama. To be explicit, these locks are 1000 feet long, 150 feet wide, and in three lifts they raise ships 85 feet between the mean level of the Pacific and Gatun Lake. More-over, with the efficiency with which the canal is operated, it takes just seven minutes to flood one of these locks. When the locks are flooded, the party in a 15-ft, boat afloat in the lock chamber is sure to be well aware of the fact that some-

thing is happening.

We had tied up to Favorite with a couple of half inch manila ropes—one forward and one aft. In almost less time than it takes to tell it, the great steel gates had closed behind us. Then the lock literally began to boil. Our little cockleshell began to thrash back and forth against the side of the ship, began to thrash back and form against the side of the sail, threatening to make pulpwood out of our starboard gunwale. A vicious jerk, and our bow line parted. The boat immediately did an about-face. The stern line caught under an oarlock as the bow pivoted around, and snap went the line astern. We were adrift in the lock, spinning, and bobbing around like a cork heading through Niagara. From the side of the ship where we had been tied up to the great steel gate at the lower where we had been tied up to the great steel gate at the lower end of the lock, it was a distance of, perhaps, 400 feet. We turned around about six times, and covered that distance, it seemed in nothing flat! As we bore down upon the gate, we were moving stern on, with every indication that our poor little Evinrude would be crumpled as we struck. Alderman and Grieser grabbed an oar each. I grabbed a boathook, and all three of us stood up in the boat ready to fend off. We (Continued on page 282)

A Bigger Gas Unit

(Continued from page 66) Crankshaft. Made of high-carbon steel; subjected to rigid inspection. Entire shaft machined and drilled from main bearings through cheeks and pins for lubrication. All bearings and pins are ground. Bearings are brass shells, lined with best

and pins are ground. Bearings are blass shells, included with observable journal boxes. Journal boxes are of brass, lined with gavernment babbitt scraped to fit, and bolted to connecting rod with two steel bolts.

Valves. Intake and exhaust valves are made from special alloy steel, to withstand severe usage and intense heat. Especially large; interchangeable. All valves are mechanically oper-

ally large; interchangeable. All valves are inectaintally operated from a single cam-shaft.

Rocker Arms. Steel forgings, bronze bushed. Operate on top of cylinder heads by push rods from cam-shaft. Push rod end equipped with adjustable hardened steel ball which rides in hardened steel socket at top of push rod; the other

end is hardened where it comes in contact with valve stem.

Push Rods. Made of seamless steel tubing. Top end is a hardened socket to receive hardened steel ball on end of rocker arm; lower end fitted with hardened steel ball seated in roller

plug, which is actuated by cam.

Camshaft. Built-up type; a high carbon shaft on which is fitted the cams. Drilled entire length for lubrication. All cams are of carbon steel, forged and hardened, being held to shaft

by taper pins. Camshaft Gear Train. Camshaft, magnetos, generator, and Camshaft Gear Train. Camshaft, magnetos, generator, and water pump driven by spiral gears off of front end of crankshaft. All gears are steel, except camshaft gear, which is bronze. All gears are lubricated by pressure from main oiling system.

(Continued on page 274) bronze

#### Outboarder

Outboarder was designed by Paul Wing of Darien, Conn, and built for him by Lloyd Allen of Westport. And after giving her a thorough tryout the writer feels that neither builder nor designer has anything to apologize for. It will be of interest to learn that Outboarder will be on display at the motor boat show

Furthermore, the makers of the sturdy little Johnson motor that sends Outboarder along at nearly eight miles an hour should be very proud of their motor's performance, for it is really surprising considering the size of the boat.

Wing, her designer and owner, says it has been worth all his effort just to make the scoffers back water. For, although Outboarder on account of her size and power, may still cause

a deal of amused comment wherever she goes, no one may scoff at her trim appearance, her comfort or her performance. In appearance she resembles a big, sturdy cruiser in miniature. One old fisherman (one of the pre-launching skeptics) who was present at her first speed tests was loath to admit the incorrectness of his predictions about her speed. He looked Johnson motor with a sympathetic wag of the head and said to Lloyd Allen, the builder, "Well, anyway you ought to be reported to the Humane Society."

Outboarder, it seems to us, is an epoch-making boat. She is quite likely to become the forerunner of a whole family of craft of similar size designed especially for outboard motors. Although her length is only twenty-two feet and her beam five feet she is fully as commodious as most boats from five to

eight feet longer

She is built of 36-inch cedar planking with oak ribs ½ x ½ inch on 8-inch centers. Decks are of ½-inch white pine (canvas covered over the cabin). And the cockpit has a 5-inch oak coaming around it. Eight staunch hard pine clamps running the entire length of the boat are bolted, through ribs and planking, to the inside of the ribs. She weighs about 650 pounds

and draws just over 9 inches of water.

The lines of the boat are without doubt the fastest that can be found for the outboard motor type of boat. Notice particularly her sheer bow and the shape of her stern. There is nothing to push through the water. Instead, Outboarder clides over it.

slides over it.

Because of her stern she makes greater speed with the Johnson motor than the fastest flat bottomed skiff—she pulls no water after her; her stern creates no suction. This also keeps the propeller in good hard water all the time.

The Johnson motor is hung over the stern just as on an

ordinary boat. Bronze cables run from the motor to the steering wheel on the cabin bulkhead.

Her cabin has 4 feet 6 inch head room, and though, as Lloyd Allen says, "it is not for the upright," still there is plenty of

room for two full sized men to sleep comfortably side by side. Four 5-inch port lights and a good sized combination skylight and ventilator make the cabin light and airy by day. At night it is lighted by three 6-volt dome lights that take their current from a storage battery located in the roomy locker forward of the cabin. Two kapok mattresses cover the entire cabin floor at night. In the daytime these may be slung on hooks along the sides of the cabin. The awning and storm curtains over the cockpit make it tight as a sedan in nasty weather.

Shortly before Labor Day, the owner and Ellison Hoover, the artist, set out on a cruise that took in most of Long Island

Starting from her mooring in Five Mile River at Darien, Outboarder made a circuit including stops at Lloyd's Harbor, Port Jefferson, Greenport and Shelter Island, Gardner's and Fisher's Islands, New London, Duck Island Roads and New Haven.

The mariners' account of the performance of Outboarder leaves no doubt of her practicability.

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# Necessities

In retrospect, now, he hardly knew himself for the same sunny, optimistic lad who had quitted a promising sea career at the age of twenty-four, for the one and only reason that a sailor's occupation offered no opportunities for a satisfactory sailor's or

Had he been in a mood for humor, the subtle irony of the thing would have evolved a smile in him, now. Instead he felt suddenly a great immediate need for the wide, open places, for the tumult of the elements, and for rain sweeping down upon

him from illimitable spaces.

Lighting his pipe, he undressed and crept into bed. He tried to read, but couldn't. He felt weary and beaten; yet upon turning out his reading light he found that sleep would not come. Then, beyond his open window came the shrill note of an automobile horn, which he recognized as Stanley Norton's. Stanley was Colinne's beau. Vance liked him.

The lad had been promoted recently to assistant manager of his department in the wholesale house which employed him.

He was a likely youngster. Trust Colinne to pick a winner.

Vance could not help feeling a bit sorry for Stanley Norton.

Creative energy of Stanley's caliber was a temptation to any ambitious woman. Colinne was ambitious. She would drive her man to the last ounce.

Soon, Vance heard Colinne's voice of greeting upon the steps and he was amazed to discern a warm human note there, which he had not noticed since she was a child. He flung the bed-covers aside and crossed to the open window, with the idea of throwing the young man a greeting, but something deterred him. Stanley had turned the searchlight of the automobile upon the walk that Colinne might see better.

As she approached the car, the lad climbed out and held the door open for her. For an instant the two young people stood facing each other, their profiles sharply outlined in the bright light. Never before had his daughter looked lovelier to Vance than she did for this brief moment as she looked up into the

than she did for this brief moment as she looked up into the face of her lover. Stanley must have thought so too, for presently Vance saw him put his hand upon Colinne's shoulder, and saw the girl respond in kind. Then quite simply, and sincerely, the boy took her face between his hands and kissed her.

Vance heard Colinne's low half-smothered laugh as she turned the searchlight around and said: "Better wait until we get into the car, Stanley. Dad might see us. It'd give him another excuse to throw a fit," and then Stanley's voice replying: "I ran across your father downtown yesterday. We had lunch together. He was awfully decent to me. Gave me some good tips. Everybody on the street speaks well of him. I guess his nerves are all shot with his responsibilities."

"Perhaps so," Vance heard Colinne answer back. The harsh

note which had suddenly crept into her voice shocked him profoundly. "But that's no reason why he should take it out on us. He was simply abominable this evening."

A moment later the sound of their motor died away in the

distance. Vance stood gripping the sill with both hands, staring after the departing car. It seemed to him as if his first born was being carried away from him with an irretrievable finality. From the depths of his harrassed soul, there rose a nality. From the depths of his narrassed soul, there rose a reat cry. But it found no relieving utterance upon his lips. He felt as if he had been asleep only a few moments when great cry.

the alarm clock on the chair beside the bed awakened him. Switching on the light he saw that it was five o'clock.

As he dressed, he noted the first faint streaks of dawn in the

East. The sky was not overcast but a sort of scud was sweep-ing across the November heavens—sure forerunner of rain. Vance thought of the suit of new oilskins in the locker of the yawl, and smiled. A little weather would be welcome after the long Southern California Summer.

When he tiptoed down the back stairs to the kitchen to make

When he tiptoed down the back stairs to the kitchen to make himself some coffee and toast, he found Marshall there in his shirtsleeves. The percolator was bubbling on the stove, and the electric toaster was glowing in the middle of the table. As Vance entered, Marshall raised his eyes to meet his father's inquiring glance.

"I'm going with you," the boy explained.

Vance was conscious of a brief glow of pleasure, which was speedily dispelled by the sullen look in Marshall's eyes, as the lad added:

lad added:

"Sanders promised to let me take the roadster for a tryout this morning—but of course it's no use, now."
"No!" said Vance.

"No!" said Vance.
They are their breakfast in silence, and the silence was not broken until they drove into the garage at San Pedro after their twenty mile run from Los Augeles.

"Mother and Colinne want the car tomorrow night," the boy said. "Better have somebody drive it back."

Vance shook his head.

"We'll be back by noon, tomorrow."

"I thought you said you were going to San Nicholas Island."
Marshall replied.

Marshall replied.
"I am," Vance told him. "There'll be plenty of wind. Tern

will make the run in six or seven hours," he added.
"Mother will be angry if we don't get back in time. and Colinne are going to the opera, tomorrow night," the boy reminded him

"We'll be back," said Vance, shortly, "if not, it won't hurr

them to take the street car, for once.

(to be continued)

# Beneath The Southern Cross

(Continued from page 268)

We coasted St. Kitts and Nevis, the latter island being the birthplace of Alexander Hamilton, he having moved to St. Croix as a youngster, and also the spot where Horatio Nelson was married to the widow Nisbet. Across a rough channel to the island of Montserrat. The sea between all these islands was very heavy and we rolled and pounded with our usual ferocity. Since arriving off Saba we had had heavy rain squalls at regular intervals. Every hour or so we would be deluged with tropical downpours lasting from fifteen minutes to a half hour.

with tropical downpours lasting from fifteen minutes to a half hour.

We anchored off Montserrat in Old Road Bay, just north of Plymouth, another open roadstead, but with only a light ground swell. A shower coming up, Jack and Billy R. stripped and went on deck to take a bath, while Billy D. and I changed to our bathing suits and lowered the canoe for an exploring trip ashore. The mouth of a small river presenting itself to view, we made for it. The surf broke heavily all along these shores, and when directly off the inlet, we proceeded to capsize in the surf, but pushing the canoe ahead of us reached the shore, where a crowd of excited natives waded out and helped us to the beach.

We bailed out the canoe and paddled up the river until it

us to the beach.

We bailed out the canoe and paddled up the river until it became too shallow, even for the canoe. We pulled it up on a big rock and continued wading. The scenery was beautiful. Orchids were everywhere, filling the air with their delicate fragrance. We even trampled them under foot. "This is the first, and probably the last time," mused Billy D., "I shall ever be able to trample on orchids. I shall think of this spot when I get back to Chicago."

We passed the ruins of an old lime factory, overgrown with vines, and from a small hill caught a distant glimpse of the boat riding at anchor in a frame of palms. Some of the

in page 268) natives here speak English with a distinct Irish brogue, being descendants of the slaves of some Irishmen who originally settled the island. We also heard French spoken by two or three. Montserrat was a lovely little gem of the Caribbean, and we should like to go back there also some day. In our usual heavy seas, we crossed to Guadeloupe, the first of the French West Indies. When we reached the lee of the intent is called a lower by the carded the lee of the indies.

of the French West Indies. When we reached the lee of the island, it calmed down, but suddenly the wind shifted into the S.W., the first we had experienced and we had a head wind again. We could not seem to dodge head winds.

Guadeloupe was the loftiest yet, and very beautiful. We coasted it for over twenty miles before reaching the roadstead of Basse Terre, the capital. Rain squalls were frequent and heavy, but the mountains, their peaks wreathed in mist, presented a glorious sight.

The ground swell at the anchorage was very heavy and we

The ground swell at the anchorage was very heavy and we rolled badly, so it was necessary to put out two anchors to steady her some. I went ashore with the custom officer and steady her some. I went ashore with the custom officer and made arrangements to take on gasoline. Here a terrific argument arose, as the officials could not understand that the gas was not to be shipped elsewhere for sale. There was much screaming in French between them and me, and I finally convinced them that we needed it in order to make our little vessel go. The necessary permit was finally given, and the gas ferried out in lighters, along with a case of Bordeaux potatoes and two bottles of wine.

I returned with the cargo, laden down with flowers. These had been presented to me by smiling Creole ladies as soon as I had set foot on the main street of the town. When I had protested that I did not wish to buy, they had appeared offended and assured me it was their pleasure to donate flowers to (Continued on page 276)

(Continued on page 276)

d Wing Charabrac



The speedy 50-foot "Overland" doing passenger service in the Thousand Island district on St. Lawrence River. Her Big Chief 50-60 H.P. Thoroard powerplant turning 1000 R. P. M. gives a speed of 15 miles per hour to this craft. Owner, Capt. C. S. Thomsom, Alexandria, Bay, N. Y.

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# Huck Says: Yachtsmen Obey That Impulse

(Continued from page 27)

veys your ideas to the steward and he seats you opposite something with bobbed hair. Do not act as if they was anyone at the table at all but after awhile you says, polite-like "Will you kindly pass the pepper" or whatever article is beyond your reach and that you doesn't really want. If she is reasonable she passes it and you says "Thank you." You then waits four minutes at the end of which time you says, "Are you going to Florida?" If she is reasonable she says "Yes" and thinks you is very intelligent to guess where she is going because the train it does not go anywhere else. After this you follows whattrain it does not go anywhere else. After this you follows what-ever line of conversation occurs to you. Now on the other hand, if you doesn't have no luck in the dining car, I advises that you grabs a seat out on the after deck. No matter how hand, if you doesn't have no luck in the dining car, I advises that you grabs a seat out on the after deck. No matter how cold you is nor what sits down side of you at first, you stick. Sooner or later some beautiful young thing, she sits in the next seat. In this case you doesn't say "Pass the pepper" but you says, "Does you notice all those funny little pigs what is running around?" If she is reasonable she admits that she does. You then informs her that pigs, they is the principal ingredient of sausages except when they uses stray dogs. She thinks you is very bright and by the end of two hours you is thinks you is very bright and by the end of two hours you is very well acquainted, she finds you is a yachtsman and she confides to you that once she knew a feller what owned a boat and that she went out in it and so she thinks yachting it is great fun.

When you gets to Miami and arrives at the hotel, you wants to march right up to the desk and you says right out loud, "I made a reservation." If when you does this you assumes the right manner, as if you owns the place, the room clerk, he the right manner, as if you owns the place, the room clerk, he smiles, you signs, and you soon shoots up ten stories to your room. Now even if the bellboy he is dressed up like a admiral of the Swiss Navy, you doesn't have to give him your whole wad. Fifteen cents it is enough. I suggests that the next thing you does is to take a bath. You draws the water and you gets in. You takes the soap and you finds that the best you can do it is to work up a slight scum on your body. You thinks this is funny and you tastes the water. I doesn't mean the water in your bathtub. That is not necessary but you tastes the water out of the faucet and you finds it is salt. This is one of their little jokes down there. They tells you that next year it will be soft but that is just another joke. Thus you has the option of taking scum baths or you can ring for a pitcher of ice water and bathe in the pitcher, as you likes.

you likes. While you are in the tub the porter he knocks on the door and it is your trunk. The situation it is very embarrassing. If you gets out and runs to the door you not only leave a If you gets out and runs to the door you not only leave a very wet wake behind you but you is not properly clothed to do business with a porter. The best thing to do is to leave the door unlocked always when you takes a bath. Then any-body can come in what wants to and you can lay in the tub and tell them where your wallet is and they takes whatever they pleases—usually a twenty dollar bill. The next hour you spends finding out what is not in your trunk and making low moaning sounds. Then you puts on your winter suit again and it scratches your knees something terrible and you perspires freely and you goes down and sends a long wire back home to your mother and tells her about the shortage and will she send it along, which being your mother she does.

I doesn't make no effort to describe Miami Beach. They is no place like it in the world. I knows what I am talking about. The weather it is so good that everybody feels agreeable-like. You almost forgets yourself and shakes hands with the headwaiter and even some people from Boston goes so far as to forget where they was raised and bows to you after

couple of weeks. Everybody minds their own business and a couple of weeks. Everybody minds their own business and they is not any piazza committee of shopworn hens what sits around and feeds on gossip like most hotels. If you wants to sit up all night and whisper some sweet nothings into the shell-like ear of some dame out under the Pahms in the moonlight, you does it and the only person what notices you he is the night watchman and all he says is "How do you do" and you says "Nicely thank you" and goes back to the buzz, I feels that it is only fair to say that if you is a young woman with a heart that is susceptible-like that you better disconnect your "B" batteries before you arrives, because your hand it is almost sure to be held down there as they all gets that way and it doesn't mean nothing and if you falls for it too serious you is liable to go back with a pain in your side what it takes months to get over. I also offers the same advice to the males. If you gets serious you is almost sure to get laughed at and If you gets serious you is almost sure to get laughed at and they is nothing worse than to be laughed at as you well knows

if you ever has the experience.

The worst thing that you has to watch out for though it is the real estate agents. If you isn't very careful you meets some feller what you think he is only friendly and he drives you around because he just wants to show you the sights and the section known as "Moral Mabels" or has made your first paysection known as "Moral Mabels" or has made your first pay-ment on a section of waterfront only half way down to Key West called "Sand Spit on the Sound" what will be the winter playground of the world two hundred years from now when Miami\_it gets overcrowded. Although I never has the price or the nerve to take a chance I knows of a number of men what has made a bunch of money down there. They is building homes down there by the thousands and they doesn't

care how they spends their money.

I hears of one feller what owns a big estate and somebody tells him a Fordson tractor it was not sufficiently romantic for his place and he better buy a elephant to mow the lawn with, so he buys a elephant and he puts a nigger in charge of him. The nigger and the elephant they gets along fine. body suggests that they ought to get a real elephant trainer from India, which he done. The nigger he gets canned and the trainer shows up and sticks a sharp pike into the elephant to show who is boss. The elephant he doesn't like the idea but he is forced to learn to sit up on his tail and do all kinds of the trainer beautiful and the street he hash for Finally one day the trainer he turns his back for The elephant makes a run for him. The trainer runs for his life and climbs the nearest cocoanut tree. The elephant wraps his trunk around the tree, shakes all the cocoanuts off on the fellers head and near brings him down. he goes to his pond and sucks up four hundred gallons of mud he goes to his pond and sucks up four hundred gallons of mud and water and squirts it on the trainer. He then runs around loose, knocks over his house, pulls up all the smaller trees and is beginning to think about breaking through his stockade so he can destroy the whole town when they finally locates his friend the nigger. By this time everybody in the place was getting ready to leave but the nigger walks in and he says to the elephant. "Why Tonay you bad boy, what you all think you is doing." The elephant he breaks into tears of joy and he kneels down on the ground at the feet of his friend, the trainer he is given the air permanent and they lives happy forever after.

lives happy forever after.

Well Chap I is not thinking of buying a elephant but you tells your readers that KEX she is going to be tied up to the dock of the Fleetwood shortly after you prints this, if you does, and if any of them falls for my line and they come to the falls for my line and they come to the falls for my line and they come they come the falls for my line and they come they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they come they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the falls for my line and they can be a supplied to the fall the falls for my line and they can be a supplied to the fall the falls for my line and they can be a supplied to the falls for my line and they can b to Miami Beach and stops at the Flamingo or the Nautilus or the Fleetwood, to come down alongside and even though I hails from Boston, I speaks to them, polite-like.

#### A Bigger Gasoline Unit

(Continued from page 270)

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which consists of a series are of ample capacity.

Reverse Gear. Special planetary type. Unusually large. Discount on go-ahead side; contracting band clutch over outside of drum for reverse. Entire gear runs in oil supplied by engine the land-pole plate of ample the property of the pro

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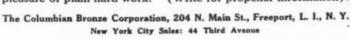
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### Beneath The Southern Cross

Monsieur le Capitaine! Needless to say I received the Grand

Razz from the members of my crew.

We had dinner that night at a charming retreat in the mountains, Sainte Claude. On the way up, we stopped at the residence of one M. Ancelin, head of the Chamber of Commerce. He was hospitality itself and expounded endlessly on the beauties of Guadeloupe and her water power. "Everywhere water!" he exclaimed, "beaucoup riviere, cataracts. The possibilities of Guadeloupe water power are limitless!" Just then a tropical shower added weight to his statement. "Even I, here on my modest estate, have made 2,000 liters of ice by means of water power!" He then showed us his bathroom, the pride and joy of his life. And well might he be proud of it. Every conceivable bathroom fixture and appliance was in that room. Showers, tubs, sitz-baths, washstands of many designs, decorated the walls. He turned on the water here and there and proudly pointed out the advantages of this and that. "All made possible by the water power of Guadeloupe!"

We departed, laden down with great bunches of roses, roses, white roses, pink roses, the gift of Madame Ancelin, delightful memories of our charming host and hostess.

St. Claude was among the heights, wreathed in mist, and as we sat on the porch of the little hotel, sipping our aperitifs, the rain dripped slowly from the corrugated iron roof. It reminded me of the stage scene in Rain, and well it might have been a South Sea Island setting. Above and behind us loomed the great Soufriere, Guadeloupe's smoking volcano. We wished we had that the time to climb to the great.

had had the time to climb to the crater. The next morning found a car at the dock to take us over to Pointe-a-Pitre, the commercial capital of the island. Guade-loupe is in reality two islands, shaped like a pair of lungs. It is divided by the Riviere Salee or Salt Creek. The western lung is known as Basse Terre or low land, and is nothing the sort, being a series of wild peaks and ranges filled with roaring waterfalls and lakes of indescribable beauty. The eastern lung is called Grande Terre or lofty land, which is also nothing of the sort, being as flat and uninteresting as the top of a kitchen table. This queer mix-up in names is hard to explain unless it was made by some map maker who was misinformed as to which part of the island was which.

The road to Pointe-a-Pitre was one delight after another. Waterfalls cascaded down besides the road, which now ran through great gorges of the mountains and now ran along the through great gorges or the mountains and now ran along the sea. Everywhere the native women in their picturesque and colorful dresses, balancing great loads upon their heads, and walking straight as arrows. All along the roads, many way-side shrines, strongly reminding one of Provincial France. Ox carts, drawn in the main by hump backed East Indian cattle-zebus. The costumes of the native women were always entrancing, and of the most brilliant and colorful hues imaginable; calico dresses with enormous full skirts checked red, blue, white, or purple. Gaudy handkerchiefs tied in various styles about and foulards thrown about their shoulders.

their heads, and foulards thrown about their shoulders.

Pointe-a-Pitre was very flat, but most interesting. A very French place. It might have been lifted bodily from the provinces with the exception that its population was almost entirely black. The market was gay and colorful, jammed with women selling everything from shoe buttons up. The cafés had their tables on the sidewalks. We found the stores interesting and collected many unusual souvenirs. Here again was different currency, though in francs and centimes, but good only on the island. Each island seems to have its own coinage different currency, though in francs and centimes, but good only on the island. Each island seems to have its own coinage which is useless elsewhere, although the currency of the mother country is accepted. Through all the West Indies, Dutch, English, or French, we had great difficulty in passing U. S. coins, and in some places U. S. gold was flatly refused. Returning from le Pointe, our car caught fire, and while it was being extinguished, Jack and I walked up to the Dolé Baths, a famous thermal institution, a favored resort in the cool of the mountains during the summer. An attendant courteously showed us about, and when the other boys came to tell us the car had been repaired, they found us deep in conversation

us the car had been repaired, they found us deep in conversation with some pretty demoiselles, from whom they had some difficulty in separating us.

Back at last through the portals of an old fortress guarding Basse Terre, to the dock. Here we took aboard two cases of champagne which cost us by the case only eighty-four cents per quart. We found things the cheapest in the French islands. With fifty dollars, one might be a king.

(to be continued)

### Adastra in The Channel Isles

(Continued from page 268)

Continued (Continued) by a gale of wind. We had thought of lingering over our Sunday breakfast and then continuing our unofficial survey of the island. But the rolling of the night, plus a falling barometer and the gray, blustery appearance of the day, decided us to wait only for the turn of the tide and then hurry back to our safe berth in St. Peter Port.

I salted and boiled the oatmeal myself, as this is a matter that can be entrusted to no one else and stirred it for twenty.

I saited and boiled the oatmeal myself, as this is a matter that can be entrusted to no one else, and stirred it for twenty-five minutes by the clock. By so doing I knew that it would be neither scorched nor underdone, and would form the perfect background for our rich (one shilling, sixpence the half pint) Jersey cream. Barkham gave the plates and spoons an extra polish, and, just as the tide turned at 10 a. m. he passed in our ambrosial breakfast.

If we had only hyperied a bit! The cream had turned with

If we had only hurried a bit! The cream had turned with the tide, and no amount of sugar would coax it back to But it was decorative in the coffee.

Shortly thereafter we got under way with power and headed back around the southern end of Serk. The wind being at first directly contrary and the run less than ten miles, we did not bother to hoist the main, although we should have made better weather of it by so doing. Around L'Etac de Serk there was quite a heavy sea running, which more than once knocked

our potential six miles an hour down to zero. In such a situation the one and only weakness of auxiliary power is revealed. An engine in a sailboat is intended to substitute for canvas, and it does so splendidly in a calm or moderate sea. But given a strong headwind and a rough sea and its efficiency is cut down 75 per cent. The bow goes down and the strong owner up while the procedure required the strong owner to be strong owner.

and its efficiency is cut down /5 per cent. The bow goes down and the stern comes up, while the propeller spins in thin water. Then, when the boat's way is already reduced, the bow rises, takes a sea square on—and the bubbles along the side stand still. Even so, sailing by the motor may be quicker than tacking under shortened sail—but let no one with auxiliary power fondly imagine that it will be effective as a last resort in coming the property a bowling gold.

sondy imagine that it will be effective as a last resort in coming home against a howling gale.

Speaking of weaknesses, this short run from Serk to Guernsey brought to the fore my only objection to cruising with a paid hand. With two or three amateurs aboard a boat it is no bother to hoist all sail even for a run as short as one mile. But when you have a man aboard you hesitate to ask him to

om page 208)
take this extra trouble. You know that if you start to make sail for the sport of it his conscience will make him lend a hand, and that it will be his job to straighten up when you come to anchor. What would be play for the owner is work for the hand, and so the sail remains down.

Nevertheless we did spread the jib and the jigger as we rounded Serk and brought the southwesterly wind on the port

quarter.

Entering the harbor after a run of two hours, we anchored with bower and kedge for the longest in-port spell since the beginning of the cruise. There were clothes to be sent to the beginning of the cruise. There were clothes to be sent to the laundry, and writing and sight-seeing to be done, and we also had it in mind to go over to Jersey for a tour of that island. In the ensuing four days we attended to all but one of these matters, but at the last minute changed our minds about the trip to Jersey.

We were deterred from going in Adastra by the report that the inner port of St. Helier (the principal harbor of Jersey) is untenable for boats without sea legs. The alternative trip by steamer would have meant a six a, m, start, a night at a hotel, and return the following morning at the same ungodly hour—and scenery has to be exceptional to compensate for all

Besides which, Guernsey is so extremely lovely that we didn't dare to risk an anticlimax. In the capital city of St. Peter Port every square foot of ground that is not occupied by masonry—quaint, prim houses built from the island granite, and winding, climbing streets—is devoted to the cultivation of flowers. Each front yard, with its roses, hollyhocks, geraniums (again I am at a loss for garden words) appears to have been standard of the peter to great the standard of the standard of the peter to great the standard of the standard of the peter to great the standard of the standa washed, brushed, and entered for a beauty contest. Each home has its window boxes, contributing to the symphony of color, and each stone wall its dark background of English ivy.

Lest it be supposed that I am indiscriminate in my appreciation of the charms of Guernsey, let me hasten to mention the Victoria tower. It is 100 feet high. It is built of red granite. It was erected to commemorate the visit of Queen Victoria to Guernsey in 1846. It is hideous. Dear old lady, how she would have loved it.

(Continued on page 278)

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# Adastra In The Channel Isles

(Continued from page 276)

The best way to lose sight of the tower is to take a bus ride around the island, and this P. L. and I did on the day after our return from Serk. Guernsey is the second largest island in the Channel archipelago and has a population of about 40,000, most of whom are principally of English descent.

On our tour around the island the driver of the bus stopped so that he might point out the lighthouse on Platte Fougere. "That, ladies and gents," he actually remarked, "is one of the most powerful lights on the Atlantic coast. It has a very powerful fog horn that can be heard for miles in thick weather, and yet there is not a light-keeper on it. The siren and the

powerful fog horn that can be heard for miles in thick weather, and yet there is not a light-keeper on it. The siren and the light are controlled by electric cables from the shore."

I was just on the point of rising and saying, "That, ladies and gents, is a mistake. When we approached Guernsey in the fog, the horn was out of kilter and we nearly fetched up on the rocks because of it. The flashing light is also out of order just now and no mention of the fixed light which replaces it is made in the partical publications. I had the devil of a time fixing our position when the fog finally cleared up." I was about to say all this when P. L., who reads my thoughts, called my attention to a sign that we had

reads my thoughts, called my attention to a sign that we had seen once before posted along the highway.

That sign, more than anything I have seen written about the island, tells the tragedy of the fog and the reefs. It says, "If any wreck or vessel is seen in distress, persons are requested to telephone immediately to the lifeboat at St. Peter Port." In a previous article I once called attention to the description of Cape Hatteras in the American Coast Pilet, wherein one reads, "A wreck or two may usually be seen on the outer shoals," but that laconic reference to the dangers of seafaring seems less ominous in its implication than this pointed reminder to the citizens of Guernsey . . . a rose growing in a bed of thorns.

The next two days of our stay at St. Peter Port were devoted

to writing and social activities, while Adastra rode to her two anchors and Barkham found work to do on deck. This, therefore, is a good time to create a diversion in favor of the barometer. Most cruising journalists give you the glass piecemeal, so much morning and evening, with an occasional dose between watches. But I like to make you swallow it all at

On the day we crossed the Channel our barometer stood high and steady at 30.38. Total calm for that run. Three days later, when we spent a tossing night at Les Laches, it greeted the morning at 30.12. The fair weather was beginning to break. And then, June 30, glass 30.10; July 1, 29.90; July 2, 29.68; July 3, 29.40; and July 4, 29.68.

Now then, the riddle is: If we had omitted our visit to Jersey partially so that we might have more time on the French coast.

Now then, the riddle is: If we had omitted our visit to jersey partially so that we might have more time on the French coast, and if we had planned to leave for Cherbourg at two-thirty on the afternoon of July 2nd, what day did we start?

Here are entries from the log: "July 2. Rain in the night (first of the cruise), and high southerly wind. Much rolling at anchor. At 9 A. M. wind WSW, blowing fresh. Add to Barkham's familiar quotations, 'Puffs do come off here spiteful, sir. Properly w'istle, some of 'em.' At 2 P. M. went alongside ietty and filled up water tank. Then anchored as before with jetty and filled up water tank. Then anchored as before, with

bower and kedge.

"July 3. High SW wind. Flags on Castle Cornet standing straight out. Violent rain squalls around midday. Mrs. McCoy, of the motor yacht Lucina, and her two daughters aboard for tea, when French beam trawler Irrawaddy which sought shelter here this morning started to drag down on us. Barkham, cooking tea with his head out the fore hatch, brought the crew on deck with a hail and they paid out more scope, missing us by inches. They ran out a kedge. Half a gale, blowing 50 miles

inches. They ran out a kedge. Half a gale, blowing 50 miles in gusts and lifting the crests of the waves in harbor."

That, at least, shows when we did not leave Guernsey, but it does not tell the whole story. In order to get to Cherbourg, which lies on the north coast of France south of the Isle of Wight, England, a boat bound from the Channel Islands must pass through the Race of Alderney. And everybody who knows anything about it will assert that the Race of Alderney is a rough shop. The currents flow through there at the rate of seven knots and there is no slack water. The Coast Pilot declares that in boisterous weather it is an exceedingly dangerous port for sail yessels. It should be avoided by going outside the spot for sail vessels. It should be avoided by going outside the

spot for sail vessels. It should be avoided by going outside the Casquets and Alderney.

So, to go back a day to July 2nd, when we found a stiff wind blowing at 2:40 (the most suitable hour, owing to the state of the tide, for making our departure) we decided not to move on. P. L. was ready to go, and Barkham was willing, and I had to make the odious decision. I hope that Linton Rigg will never hear of it. P. L. consoled me with the remark that even though we did wait a day we would not be behind our schedule, thanks to the twenty-four hours we had saved by not going to Jersey. That was but little solace. I felt that down in my heart I am a fair-weather yachtsman.

down in my heart I am a fair-weather yachtsman.

July 3rd was even worse, as has been shown in the above extract. Putting to sea without necessity on a falling barometer is like selling short on a rising stock market. A pastime for idiots. The tide being an hour later, 3:30 was the best time for our departure. But at that moment the wind picked up an iron bucket from our fore deck and blew it almost to the cockpit; and the decision to remain in port another tide was less difficult to make. When the wind reached its height and the French trawler dragged down between us and Lucina, P. L. commended me for my judgment.

But all the time I was cursing myself for a chicken-hearted wretch. At 6 P. M. I looked at the glass and saw that it had risen one-tenth. I rang the electric bell (Adastra has a call system that we use only in times of great stress and national emergencies) and when Barkham peered inquiringly through the forcastle door, I said:

"Barkham, we get under way tomorrow morning at 4 o'clock."
"Aye, aye, sire," replied Barkham, which is exactly what he ould say if I told him that we were about to try sailing over would say Niagara Falls.

As a matter of fact, I had some reason to be hopeful about the morning, as our fisherman had done some forecasting that afternoon that was nothing short of clairvoyance. had been blowing with increasing strength for three days when he told me that we could now look for a patch of clear sky in the nor'west, followed by a shift of wind from that quarter, and then a harded blow for a couple of hours. After that, he hoped, the wind would rotate clockwise and bring us fine er. Everything had been done according to his prescrip-The sky had broken away temporarily, the wind had shifted in the twinkling of an eye, and for two hours it had blown great guns.

But now it was back in the sou'west, which was a little disheartening. Nevertheless, we turned in early, and at two in the morning when I looked out the wind had moderated. Two hours later when I aroused Barkham it had quickened again,

hours later when I aroused Barkham it had quickened again, and as he poked his reluctant head out of the forecastle he made the only pessimistic statement that he has uttered on the entire cruise. He thought it didn't look too good.

Yet this was the Fourth of July, which meant a good deal to P. L. and me, and there were American men-of-war at Cherbourg and Cherbourg is in France—and we simply had to start. Half an hour later we did so, having been held up by the neces-sity of breaking out the kedge with the engine. When daylight overtook us in the Little Russel and we found a clear sky with only a fresh breeze from the sou'west I agreed with the prophet

of Ecclesiastes that there is a time to stay and a time to weigh

— and felt that I had picked both times with deady accuracy.

In leaving St. Peter Port for an eastern harbor on the French
coast there are several things to bear in mind, but only two of great importance. These are, the direction of the wind, which if blowing with any strength, must be fair, or southwest, and the time of the commencement of the northeast current in the Race of Alderney. If the wind blows across or contrary to the current in the race it raises a chop that no small boat should be subjected to. If the current is contrary, no amount of wind will carry a sailboat through the Race. But if wind and tide are favorable a fast boat can make it in nothing, flat.

There are two upsets to these simple calculations, however. One is the factor of time, for the Race is twenty miles from St. Peter Port, and a sailboat must leave soon enough before the change of the tide to make allowance for a lack of wind. The other obstacle is the peculiar nature of the currents themselves. In other waters it is nothing to start with the first of the flood and carry a strong fair tide for fifty or seventy-five miles, provided wind or motor are good. But if one started with the first of the northeast current at Guernsey he would run square into the southwest stream at the Race and drift half

way back to his starting point.

Hence, while Adastra left Guernsey at low water, she found a three-to-four-knot current against her in the Little Russel, and did the equivalent of six miles of running in order to cover two miles of ground. One hour after she had cleared the harbor she had passed out of Little Russel and the restraining current no longer pulled along her keel. After that it was fast going.

Alderney showed up immediately in the morning light, the two white towers of the Casquets loomed up mysteriously a little later, and before we had raised the French coast and dropping Guernsey, Herm, and Serk into the haze which hid the southwest stronghold of the wind. We sailed with jib, forestay-sail and double-reefed main, and with the motor running sweetly at last on a combination of kerosene and gasoline. The sea at last on a combination of kerosene and gasoline. The sea was only moderately rough, and the wind not too much for comfort.

Why, then, the curious combination of engine and double-(Continued on page 280)



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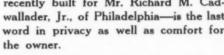
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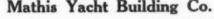
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# Adastra In The Channel Isles

(Continued from page 278)

reefed main? Because we wanted to get to the Race of Alderiney as fast we could; but we had our wind almost dead astern

when we got there we didn't want to jibe.

Breakfast, that movable feast, took place at 6:15, and consisted of ham sandwiches and fruit. I am not the man to go below on a rough run of only forty miles and cook up a hot chow, and I can't see myself telling anybody else to do so. sandwiches go down slowly early in the morning, and before the last of them had disappeared it was eight o'clock and we were midway between Alderney and Cape de la Hague lights. We looked astern. The sea over which our dinghy towed

was more tumultuous than it had been, but the whitecaps were not numerous. The wind was fresh enough to fill our sails although the motor alone was giving us better than six knots. Hence, if there was good wind and no unusual sea, we had entered the Race at the right time of the tide, and the current was with us. "Hm," said I, "nothing to it. Go through this terrible Race of Alderney in a canoe."

I dropped below to look at the chart. Everything seemed

lovely. The lighthouses were where they were supposed to be, and the beacon on La Foraine rock, near Cape de la Hague, had showed up on schedule time. We had stayed a day and a half in Guernsey because of this Race, and what fools we had

Barkham was at the tiller when I went on deck again, finding that the absence of the mizzen made all the difference in the world in the steering qualities of the boat. She was actually sailing with an easly helm for the first time since he had known

"Barkham," I said, looking toward the coast of France, "it seems to me that that beacon and the lighthouse have closed in on each side since the last time I looked. They ought to open out, sailing this course."

"I don't think they're any closer, sir," he replied, "the current

ought to be with us.

But in another minute when we looked again the two land-marks were lined up, one behind the other, and it was only too evident that a strong counter current was sweeping us toward the shore. I shan't attempt to make the moment more dramatic than it was. We had been steering a little south of east since entering the Race, and we had come too near the land and were being swept due south. So we carefully jibed over from port to starboard and steered northeast. In a few minutes the beacon widened its bearing from the light.

And then we stumbled into something weird. describe as it didn't remain fixed like a mountain, or a whirl-It formed and unformed and towered and sank, and swirled this way and that. Despite the onward drive of sail and propeller it caught our bow and swung it around, and we came

within an ace of jibing.

Truly it was the most peculiar sea that I have ever seen. It commenced to slop aboard, although the wind and P. L. dropped below to close a port that had been left open for ventilation. She closed it just in time. Our bow lifted to a hummock and dropped off it, down, down. The sea folded over the fore deck as the water enfolds a soap dish when a child submerges it in a bath. No fuss. Just ominous, as if The sea sucked aft and another time it might not come up. splashed against the cockpit coaming.
P. L. called up, "The table went adrift with that last one."

Barkham went below and propped it where it would do no arm. Then they both came on deck and we jibed back to the harm. port tack. Off toward the land the waves tumbled up furiously like liquid pyramids, and the driven foam lay like a white sheet over the surface of the water. We were glad we hadn't been

carried into that mess.

And we were not sorry we had delayed thirty-six hours at Guernsey.

(To be continued)

#### Skimmer, A 1½ Liter Hydroplane

to readers, who might wish to build a little boat according to these plans, arrangements have been made to supply blue prints of the drawings to a larger size than the published reproductions. If interested, write to the Editor of MoToR BOATING, 119 West 40th Street, New York, N. Y., for further particulars.

The specifications which follow are given in a much more complete form than usual, in order to explain any doubtful

points which might arise during the construction.

SPECIFICATIONS

Keel: The keel will be formed of elm or oak, sided 4 inches and moulded 1½ inches. At the forward end of the fore plane, it will be gradually tapered and carefully scarphed to the stem knee, the joint being well coated with white lead before being secured by four 3/8-inch galvanized through bolts. At the afte end of the fore plane it will be screwed to a step piece, and the fore and after ends of the following plane must be screw fastened at the transom and the floor. After the frames are fastened at the transom and the floor. After the frames are erected, the underside of the keel batten should be bevelled to take the run of the bottom planking. On the underside of the keel a false keel of 2-inch oak is arranged to form a rabbet for the garboard strakes, which will also be bevelled to suit the planking.

Stem: This will be a natural bend oak knee, sided 21/2 inches and moulded as shown on the construction drawing, scarphed and secured to the keel, and carefully rabbeted to take the planking. On the forward side of the stem, a triangular stem piece made of hard brass will be screwed to form a knife

edge and protect the stem.

ge and protect the stem. Transom: The transom will be built up of mahogany, finishow to a 74-inch thickness. If necessary, this may be formed Transom: The transom will be built up of mahogany, finishing to a ½-inch thickness. If necessary, this may be formed in two parts, by making a halved joint well coated with thick varnish, and clamped in position, while ¾-inch cleats are secured on the forward side to take the ends of the planking. The keel, chine, and clamp will be notched into the transom, while the ribbands will be notched into the cleats only.

Transom Knee: On the forward side of the transom, a natural oak or hackmatack knee will be fastened, which is to be sided 1 inch and moulded as shown on the plan, securing

be sided 1 inch and moulded as shown on the plan, securing

both the keel and the transom.

Chines: As shown on the construction drawing, allowances have been made for rabbeting only for the side planking. The chine and the bottom planking are secured without a rabbet. This reduces the labor involved, and will be found equally efficient. The chines should be of elm or oak 2 by 1 inch. Should the builder prefer to rabbet the chine on both edges. a 134 by 134-inch elm or oak piece will be found to be equally satisfactory. In either case, the forward end would be slightly

(Continued from page 76) tapered and notched into the stem. The after chines must be carried forward, reduced as necessary, and fastened to frame number 6, to give as much strength as possible in a fore and

> Bottom Frames: These are to be of mahogany sided 3/4 inches. They will be cut to shape and extend across in one piece from chine to chine, and are notched over the keel. Be sure to put limber holes in each side. Care must be taken that in no case the moulding from the top of the keel to the top of the frame is less than 2¼ inches, and in general this is to be kept as deep as possible. The bottom frames are to run out to not deep as possible. deep as possible. The bottom frames are to run out to not less than  $2\frac{1}{2}$  inches at the chines. As will be seen from the drawings, the station numbers mark the forward side of the bottom frames, and the after side of the side frames. When cutting these frames, care must be taken to allow for the necessary bevel to be given to the planking in a fore and aft

> direction.
>
> Side Frames: These will be of mahogany, sided 3/4 inches and moulded 21/2 inches at the clamp, and 31/2 inches at the chine. The fastenings at the bottom frame will be formed the chine with large washers, and 11/2-inch by 3/16-inch hard brass bracing pieces, screwed to the frames with 1½-inch number 10 round head brass screws.

> Step: At station number 8, the bottom frame is to be increased to 7% inch thickness. The top of the frame is to be carried across square to the base waterline. A floor formed of mahogany % inches thick, is to be notched over the keel, and bolted to the after side of the main step piece. When the planking is in place, a backing piece of 1½-inch mahogany

> planking is in place, a backing piece of 1½-inch mahogany is to be screwed to the step piece. The detail drawing of the section at this point shows this fully.
>
> Side Keelsons: These are to be formed of clear spruce, sided 1 inch, and moulded as necessary, carried fore and aft as shown on the construction drawing. In the way of all frames, the keelsons will be notched down, and ¼-inch galvanized or brass through bolts used for fastenings. At the transom, they will be secured by screws, driven in slightly on the skew. Great care should be taken in fitting these keelsons, in order that they may absorb the heavy strains in a fore and aft direction, and distribute them uniformly throughout the entire hull.

out the entire hull.

Planking: The bottom planking is to be of mahogany in single lengths, to finish 1/2 inches, and is to be fastened to trames, keel, seam battens, etc., with 3/4-inch number 8 screws with the heads slightly countersunk.

The side planking is to finish 5/16 inches and is to the bottom planking. is to be fastened in an identical manner (Continued on page 294)

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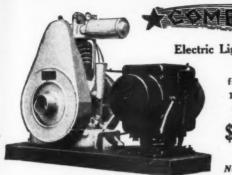
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# Outboard Motoring Through The Panama Canal

were within ten feet of the gate, and bearing down upon it like a chip in a mill race. In another second we expected to be swimming in the lock with the boat reduced to kindling wood, but at that instant some freak of the current and good fortune got in its work. The boat pivoted in the vortex of a fortune got in its work. The boat pivoted in the vortex of a ten foot whirlpool, and we started up the lock in the oppo-site direction. Temporarily clear of all obstructions, I dropped the boathook, and adjusted the starter cord upon the motor. The motor started with the first pull, and instantly we regained partial control of the cantankerous skiff. With Grieser, who is a powerful oarsman, pulling for all he was worth, we manis a powerful carsman, pulling for all he was worth, we man-euvered alongside of the Favorite once more, and made fast with lines strong enough to have held a merchantman. A chorus of shouts went up from the crew of the steamer, and the workmen along the tops of the lock. We climbed aboard the ship to avoid any possible repetition of the mishap, and from the deck I observed about ten life buoys floating around through the lock—tossed from the ship and the lock decks when it appeared we were about to need them.

The water is let into the locks through a number of huge tunnels in the bottom of the chambers. Thus, the commotion becomes less as the water level increases. In almost less time than it takes to tell it, it seemed, we were floating within a couple of feet of the top of the lock. Then the gate at the other end opened, and we put-put-ed out into the quiet waters

of the canal above.

Since this first experience in a Panama Canal lock with a 15-foot boat, the writer has had many opportunities to witness the functioning of the various canal locks, and other features of this great shipway, and I can say without the slightest fear of contradiction that it is the CLEANEST job ever done by Uncle Sam. The construction, design, and operation of the Panama Canal is a monument to American engineering skill, and efficiency under Government management when our people have decided to do the impossible. The value of space prevents me from going into the details of the difficulties that had to be overcome before the canal was actually completed. But, that's an old story anyway. Most Americans have already heard it. Its operation is an object lesson for efficiency experts, as well as for certain Americans (?) who hold the opinion that our Government can't handle a big job without bungling it. I'll buy a twelve dollar Stetson for the layman who can go to Panama and offer one practical suggestion for Since this first experience in a Panama Canal lock with a who can go to Panama and offer one practical suggestion for increasing the present smooth operation of the canal. Ships go through on their own power, except for the few hundred through on their own power, except for the few hundred feet that they are taken in tow in the locks by the electric mules. The average steamship time in transiting the canal from ocean to ocean is about seven hours. The whole organization moves like a piece of clockwork. A ship comes up to a lock. The gates open, the ship is taken in tow by the steel mules—and PRESTO! In seven minutes she's over the lock, and on her way again. There is not a whistle or bell sounded. There's no shouting of orders across the top of the locks—no noise, no confusion, no nothing—just EFFICIENCY in the achievement of the impossible, and no fuss about it at all. It's a job that's as clean as a hound's tooth. The writer has no suggestions to offer!

It is only a short spin for any kind of a motor boat from

It is only a short spin for any kind of a motor boat from Mira Flores Lock to Pedro Miguel Locks. Through this portion, the canal is formed by Mira Flores Lake, a sizeable body of water, formed by the lower lock creating a dam to impound the waters of Mira Flores River. With the tropical vegetation on both sides, it is a place where the motor boatman would like to linger. We could not linger, however, due to the precessity of chesing the steamer Favorite in order that we would like to linger. We could not inger, lowever, due to the necessity of chasing the steamer Favorite, in order that we might go through the next locks with her. Ships transiting the canal move at greatly reduced speed, so that we had little difficulty in holding pace, and slipping into the next lock before the gates were closed. There we profited from past experience. Our boat was tied up to the steamer again, with strong lines, while we went outout the deck of the vessel to strong lines, while we went onto the deck of the vessel to watch the rise over the locks. Fifteen minutes later we had gone through the two chambers of Pedro Miguel, and had reached the level of Gatun Lake, privileged to follow cur own schedule until we reached Gatun Locks for the descent to the level of the Atlantic Ocean, within three miles of the eastern

Above Pedro Miguel Locks the canal begins to threads its yay between enormous hills. It is somewhat tortuous through way between enormous hills. It is somewhat tortuous infough this portion, and finally narrows down between the towering walls of Culebra Cut. The word culebra, incidentally, is Spanish for Big Snake. Now, Culebra Cut is unquestionably an inspiring sight from the deck of a ship, but from a 15-foot boat it seems infinitely larger. Put-put-ing through it as we

(Continued from page 270)
own upon it did, it is difficult to realize that one is touring through a ditch, a waterway dug by man. It seems much more like going through some tremendous natural water canyon. Here the American engineers whacked their way right through the con-

American engineers whacked their way right through the continental divide for about six miles, and to a maximum depth of 827 feet. Only the lack of a swift current detracts from the impression that one is traveling through a natural waterway. By previous arrangement with my friend William S. Torbert, motorcycle dealer in Panama City, motorcycles were waiting for us at a wayside ferry station near the entrance of Culebra Cut. Tying our boat to the shore, we transferred to these speedy little land vehicles, and set off over an obscure trail leading back through the jungle. The trail wound around through the jungle, but ever upward, until in about five miles of touring we fairly popped out upon the very summit of the of touring we fairly popped out upon the very summit of the sidewall of Culebra, and found ourselves looking down—upon a view of the canal that few tourists ever get. Culebra from the top looks like a smaller edition of the Grand Canyon of Arizona, and it requires a long stretch of imagination to vis-ualize its having been dug by humans.

ualize its having been dug by numans.

Returning to our boat, we put-put-ed on through the narrow canyon-like section of the canal, past the mouth of the Chagres River, whose impounded waters creates Gatun Lake, and on to Gamboa. It was noon when we reached Gamboa. The town Gamboa. It was noon when we reached Gamboa. The town boasts no such thing as a restaurant, but we found a group of Panamanian women waiting with baskets of food for just such hungry wayfarers as ourselves. Not one of these women could speak a word of English, but the writer has lived too long among the Spanish-speaking residents of Southern California and Mexico, to let that detail cause annoyance. We got bread, cheese, fried fish, and fruit, and with this hand out topped off with generous draughts of hot coffee from portable

charcoal braziers

Although this journey through the Panama Canal was made at a time of year when most of the United States was shoveling snow, and worrying about coal bills, the heat was stifling. Moreover, the climatic discomfort was not improved by the changing character of the canal shores east (or rather, north-west) of Gamboa. Beyond this point the canal gradually widens out. The shores spread out, and soon shade into jungle widens out. The shores spread out, and soon snaue into jungle scenery such as temperate zone dwellers know chiefly from fiction stories. I got a great thrill from seeing a drove of monkeys dangling through the jungle, and scolding at us as we passed. A little later an enormous flock of huge strange birds went squawking and chattering overhead. "What kind we passed. A little later an enormous nock or huge strange birds went squawking and chattering overhead. "What kind of birds are those?" I asked Mr. Grieser, knowing that he had lived in the Canal Zone for many years. "Papagayos," he replied, evidently accustomed to doing much of his thinking in Spanish. Now, the word papagayo is unknown in Mexican-Spanish, but an analysis of the word quickly told me that papagayo signifies pope's rooster, otherwise a parrot! They are pericos in Mexico, but Mexico does not speak the best Castilian. Papagayo seems a much more picturesque name.

A few miles beyond Gamboa the village of Darien looms into view, or rather, the chief object of its existence does. That is a huge radio tower, one of the largest on earth. The village itself does not appear out of the jungle until one is actually in it. Darien is purely a community of Government creation. It is the chief communication base for the entire Canal Zone. Its location in the jungle almost midway across the Isthmus of

Its location in the jungle almost midway across the Isthmus of Panama is obvious to anyone of a military turn of mind.

By the time Darien is reached, the Panama Canal has lost every aspect of being a canal. It is virtually a still-water tropical river, an arm of Gatun Lake, which to all appearances might have existed from the beginning of time. The water area constantly increases, and we, in our little cockleshell of a boat found ourselves chugging along through a maze of Robin-

son Crusoe Islands—guided on our way only by the numbered buoys that mark the shiplane. Gatun Lake is the largest artificial body of fresh water on the face of the earth, having some 286 square miles of water surface. It was formed when the canal was built by daming up the end of a great shallow valley through which the Chagres River discharged into the Atlantic Ocean. By the clever ex-pediency of creating this lake the engineers saved a tremendous amount of digging by spreading the Chagres over the jungle half way across the isthmus. They likewise provided a tre-mendous reservoir to insure abundant water for the operation of the canal locks, and hydro-electric power sufficient to meet all the needs of the Canal Zone, and much of the Republic of Panama. The word Ga'un is Spanish for—Big Calf.

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(Continued on page 284)

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# Outboard Motoring Through The Panama Canal

(Continued from page 282)

Way is full of stars. It would take months to all these islands—the majority of them inhabited only by scattering tribes of native Indians, tapirs, alligators, tawny cats that the Panamanicans call a tigre, semi-aquatic beasts, and innumerable birds. There are inlets and bays that run back into the jungles for many miles. Moreover, outside the buoy-marked shiplanes navigation with any kind of a small boat is both difficult and dangerous. Probably half the lake's water area is over the flooded jungle where trees and tropical vegetation protrudes, dead, or dying, above the surface. If one deviates from the main ship channels, the navigator never knows what moment he may find his hull hung up in a treetop, or at what instant his propeller or rudder may be wrenched off by striking a submerged log.

With our little fifteen foot panga (Spanish for rowboat) we got about into the middle of Gatun Lake around 2 P. M., which is the hour at which the trade winds reach maximum violence. The water was simply a mass of white-capped waves, into which all these islands-the majority of them inhabited only by scat-

is the hour at which the trade winds reach maximum violence. The water was simply a mass of white-capped waves, into which our poor little boat wallowed and pounded right into the teeth of the gale and the sea. Water began coming aboard by the bucketfull, and in a very few minutes we were drenched from head to foot. Getting wet, however, has little significance in the tropics. It's more comfortable to be wet. For two hours Grieser and Alderman were busy bailing the boat, while I sat at the tiller, doing my best to keep the craft from porpoising into the waves. Finally, the shiplane got so rough we could no longer hope to weather it, and we sought the lee of some of the sheltering islands even at the risk of getting lost, or running afoul of a treetop, or deadhead (as Canal Zone people call a semi-floating, watersoaked log). For the rest of the afternoon we played a sort of game of aquatic hide and seek. We'd sneak along in the lee of a chain of islands until we We'd sneak along in the lee of a chain of islands un'il we reckoned we were about as nearly lost as we dared to get. Then we'd poke our bow out into the open waters again, and have a look for the channel-marking line of buoys. We rode rough water aplenty in playing this game, and several times were so near swamping that I'd have sold the boat and all our chances for about one peso silver. As we explored some of these byways back of the jungle islands the thought of getting get any wetter, and there would have been little excuse for getting drowned—but, getting out in the water didn't look so getting drowned—but, getting out in the water didn't look so good when we observed fifteen- and twenty-foot alligators parked around on various logs, and on every piece of island beach we passed. Every now and then a huge black snout would break the surface ahead, or alongside the boat. It would usually swim along for a little way, and then go down again, leaving a distinct odor of fishy musk in the air. Those 'gators may not have been hungry, but we preferred to assume that

they were!
This rough going, and getting hung up on top of the jungle This rough going, and getting nuing up on top of the jungle at least a dozen times, of course, slowed down our progress. Sunset found us still pounding along through Gatin Lake. There is almost no twilight in the tropics. When the sun goes down it's dark almost as if someone might have turned off the electric switch supplying the light. Thanks to Panama Canal efficiency, however, the buoys across Gatin Lake are lighted, but in order to follow them in the inky blackness of the right was had to come right out into the chiplens. Disc the night, we had to come right out into the shiplane. Distances seem almost interminable when one is traveling blind, and can't see that any real progress is being made. We passed buoy after buoy, but didn't seem to be getting anywhere. Finally we came out from behind a low-lying tropical island, and far off over the horizon beheld a maze of distant lights. "Gatun Locks!" exclaimed Grieser. Thereupon we disregarded the buoy lights, and began heading across open water toward the galaxy of lights that appeared like a distant city. Although those lights appeared to be very distinct, it was another hour before we had covered the distance, and tied our boat up in a slip at the Gatun Yacht Club.

Around Gatun that evening we heard tales of fishing, hunting. the night, we had to come right out into the shiplane.

skip at the Gatun Yacht Club.

Around Gatun that evening we heard tales of fishing, hunting, and other allied pleasures of boating in the vicinity of the Panama Canal Zone that were enough to induce a red-blooded process of the States, and more there. The Panama Canal Zone that were enough to induce a red-blooded sportsman to pull up stakes in the States, and more there. The Canal Zone sportsman not only has Gatun Lake for a playground, but he has two oceans at his very door. There are islands to be visited within a convenient touring distance for small boats. The name Panama means—Plenty of Fish, and it runs true to this meaning, regardless of whether one fishes in either of the two oceans, or in the fresh water streams—some of the converted to the streams—some of the converted to the streams. of which are navigable for considerable distances inland. from the navigable waterways, the country is an almost impenetrable jungle teeming with every kind of game to be found in the torrid zone of the western hemisphere. Due to the tropical vegetation, human locomotion is virtually limited to places that can be reached by boats. A man on shore, with a

good machete (brush knife), and a compass can move about a mile a day. Perhaps the best fishing in the Canal Zone, however, is within a pistol shot of Gatun Locks—in the Chagres River just below the great dam that was built to form Gatun The waters flowing over the dam carry great quantities Lake. The waters flowing over the dam carry great quantities of fresh water shrimps, minnows, and other natural fish foods. The fish coming up the river from the Caribbean Sea cannot pass on into Gatun Lake, but at the point where they reach "the head of navigation," they find splendid feeding ground. The roaring white waters just below the dam, and the spillway from the hydro-electric plant, are literally alive with snooks, tarpons, and a dozen other kinds of tropical game fish unknown to the water that the state of th majority of temperate zone anglers. The Chagres below the lake is likewise the hang-out of numerous alligators (lagartes, the natives call them), evidently attracted there by the abundance of fish.

dance of fish.

From the top of Gatun Locks one may stand in a put-put boat and look down over the three great chambers in which ships are lowered to the level of the Atlantic, out over the last four miles of the Panama Canal, Limon Bay, and the blue Carribbean Sea beyond. Going down the locks in a small boat is far less thrilling than going up. The water in the chamber remains calm and placid as it is let out of the chambers. We marrely sat in the boat as the water went down and the wellremains calm and placid as it is let out of the chambers. We merely sat in the boat as the water went down, and the walls of the lock seemed to rise around us. Our descent of the three chambers at Gatun—a perpendicular drop of 85 feet, was made in company with a 25,000-ton British merchantman that was heading through from Wellington. New Zealand to Liverpool. Half an hour after slipping out of the lower lock chamber we put-put-ed out into Limon Bay, and docked at the Naval Sealane Base at Coco Solo, near Cristobal. We had realized our ambition of doing Panama with a PUT-PUT, and best of all—we'd seen the canal as few travelers are ever privileged to see it. Our actual touring time was 8 hours and 40 minutes for the Our actual touring time was 8 hours and 40 minutes for the fifty-two miles from ocean to ocean, and we'd done this with less than five gallons of gasoline, in spite of the headwind and sea in Gatun Lake. Two days later I had the pleasure of doing the trip alone in the reverse direction, or from the Atlantic Ocean back to the Pacific, making the run in eight hours flat

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### Sentinels of Our Coasts

(Continued from page 25)

these arrangements apply only to lights of a fixed color. Red is used in many cases to indicate dangers, and also the limits of navigable waters. The distinction between the colors is obtained by means of screens, arranged to separate the rays at the source. This, however, is not possible at a distance of several miles from the light, and it will be found that there is a slight overlapping of the colors, giving a pink appearance to the light at a distance. Those lights which show both red and white flashes at a distance. Those nguts which show both red and white flashes at regular intervals are designated as alternating lights. Among the recent improvements in the light arrangement has been the adoption of green lights for certain conditions, and since the visibility of green is greater than red, these lights are very visibility of green is greater than red, these lights are very suitable, and favorably received by navigators.

Where electricity is available from sufficiently reliable sources,

electric lights are being installed to replace the earlier types of oil and vapor lamps. Experiments have been made with both incandescent and arc lights for this work. The principal reliance is still the oil lamp however, since most stations are so far removed from sources of power, that this easily handled fuel must be depended upon. Oil lamps used in light houses fuel must be depended upon. Oil lamps used in light houses are of the incandescent oil vapor type, burning kerosene under pressure under a mantle. The Bunsen burner flame heats this to incandescence, giving off a brilliant light. An automatic alarm device is frequently attached, which will ring a bell summoning the attendant if the light does not function properly. Other illuminants are also in use, among these being acetylene and oil gas. These are used extensively for unattended lights, and cases are on record where lights have burned continuously day and night for twelve to thirteen years, requiring merely the occasional replenishing of the gas supply.

The intensity of lights was formerly designated by the type

The intensity of lights was formerly designated by the type of optical equipment with which it was fitted. As long as the lenses and illuminating medium were the same, it was perfectly proper to designate the lamps as first or second order lights in this way. With the introduction of more modern and powerful lighting sources, the term candle power modern and powerful lighting sources, the term candle power has been introduced, and the useful horizontal rays are taken as being the value of the light. The most powerful light in the service is the one at Navesink, N. J., which has an estimated candle power of 710,000. While the geographical range of this light is only 22 miles, its glare has been seen at sea for distances almost three times as great. The intensity of this light is obtained by a series of three incandescent oil vapor burners enclosed in a modern lens of high power. The entire number of lights along the coasts which exceed 100,000 candle power is 52.

candle power is 52.

While the light indications of any station are perfectly efficient and satisfactory under normal conditions, many are located in places where the fog is unusually persistent and almost continuous. The cost of Maine is particularly notorious for this, and the station at Seguin, Maine, has a record of 2,734 hours of fog in a single year, which is equivalent to almost one-third of the entire year. Thirty-five stations in the service have records averaging over 1,000 hours of fog a year, and more than one-half of these are along the Maine coast. In order to serve the navigator in times of fog and obscured order to serve the navigator in times of fog and obscured vision, all light stations are also equipped with powerful fog signals of varying kinds. The most common are bells, which are rung by hand or by automatic machinery, depending on the size and importance of the point. Automatic mechanisms have been developed for striking bells, and are operating successfully at points where a moderate range is sufficient. Along the sea coast, steam and air whistles are used in many places, but the expense of carrying steam and the length of time necessary to get the signal in operation in case of a sudden necessary are tending to displace this type of signal. Sirens, operated by steam, are also in use, although compressed air, obtained by means of a small gas or kerosene engine, is rapidly displacing the steam. the steam.

Another form of fog signal is known as a diaphone. instrument, operated by compressed air, is exceedingly powerful. The sound produced is similar to that of a siren, but it carries an abrupt roar at the end of the note. It is manufactured in several sizes, and the largest of these have been heard at distances of 25 miles at sea.

Similar to the arrangement of identifying lights, fog signals are also arranged to be identified by means of distinctive signals, consisting of long and short blasts, and operating on a precise time period, so that they can be accurately recognized. Due to the peculiar and unaccountable action of sound fog signals at times cannot be heard when relatively close to the station. This same signal at a greater distance will be plainly heard and all navigators must be prudent when operat-

not in what are generally designated as silent zones. Ocean going vessels of the more modern type have a still more reliable indication in the submarine signal, with which the most important light vessel stations have been equipped. This consists of a heavy bell, which is suspended in the water, and operated by a mechanical device, striking a distinctive signal at regular intervals. This sound travels through the water, and is picked up by suitable receiving mechanisms on the vessel, and it is possible by skilled observers to determine quite

closely the distance, and approximate bearing of the signal.

The structural difficulties involved in erecting and maintaining the larger lighthouses are great. In some cases where it is possible to construct on a rock foundation, the work is simplified and requires merely the necessary rigidity and rigidity and simplified and requires merely the necessary rigidity and strength to withstand the action of the wind and weather. In other cases where it is necessary to erect a tower on land or at the entrances to rivers and harbors, breakwaters or pier heads are frequently employed. On submerged locations, the engineering problems are greater, and the work difficult. In many cases where the bottom is of sand, a pile or caisson foundation is required. Another difficulty is the action of marine borers on timber structures, and it is necessary in tropical waters to use concrete piles as a support for the buildings. Where the light station is in exposed waters the buildings. Where the light station is in exposed waters, the work must be carried out with great care, and the exercise of many precautions. The strength of the waves is terrific. and unless a lighthouse is well anchored to the bottom, it is in

great danger in every storm.

Exposed locations at sea, where it is not possible to Exposed locations at sea, where it is not possible to crect a permanent structure, are protected by light vessels, of which there are 60 in commission, with 13 acting as relief vessels. These vessels, particularly of the newer types, are heavy and substantially built craft, equipped with Diesel engine propelling machinery, which enables them to move to and from their stations, under their own power, and also helps them to maintain their place at their station, in the event of unusually severe weather. Cases are on record where the force of the gals was so heavy as to require the operation of the propelling machinery for hours at a time, in order to maintain the vesue at its station, and prevent it from being blown away. The newer and largest of the light vessels are 135 feet in length, with a beam of 29 feet. The Diesel engine equipment is of 400 h.p., and they are manned by a crew of five officers and 400 h.p., and they are manned by a crew of five officers and eleven men. The sizes of the vessels between the largest and 400 h.p., and they are manuscular to eleven men. The sizes of the vessels between the largest ame the smallest are various, the smallest light vessel being only 77 feet long, with a beam of 20 feet. This is one of the oldest in the service, and was built 70 years ago. The few remaining old boats are rapidly being replaced by newer and more modern vessels, as funds become available each year. One of the most important items for the safety of the light vessels is the mooring gear. This is especially designed

light vessels is the mooring gear. This is especially designed and adapted to hold the vessel under the most unusual condand adapted to hold the vessel under the most unusual continuous. The main mooring chain is composed of links of the best double-refined wrought iron, 15% inches in diameter, with cast iron studs, and tested to a proof strain of over 80,000 pounds. The mooring anchors are special cast steel mush-rooms, and in cases of vessels in unusually exposed positions, a mooring buoy is shackled in the submerged part of the chain. in carrying its great weight. Since a length of six feet weight 160 pounds, the entire weight of a standard 120 fathoms cable is about 9 tons. It can be appreciated that, when the sea gets rough, the strain on the ship and gear is

tremendous.

In order to permit of distinguishing the light vessels in the day time, it is customary to include some form of structure at the mast heads, and also to paint them in a characteristic

way and in distinguishing colors.

In addition to the fleet of light vessels, the light house service maintains an equally large fleet of tenders to look after the needs of all of the lights and light vessels in the service. These boats are large seagoing vessels up to 200 feet in length They are called on to inspect and repair all of the equipment of the lighthouse service, and must necessarily be seaworthy and able. Bases for the thorough repair of all equipment and vessels, are maintained in all districts. The principal one is the one of the third district at Staten Island, New York. Here all of the buoys and lights are rebuilt and repainted as often as

The crew of the light stations are frequently called on the render assistance to persons and ships in distress, in the vicinity render assistance to persons and ships in distress, in the vicinity render assistance to persons and ships in distress, in the vicinity render of the rend of their station. Many meritorious acts of heroism have been rendered in this way. Medical attention has been secured for distressed seaman, and in every case, the keepers have done more than was required in order to make their charges coming close to these signals, to insure themselves that they are

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### Sturdy and powerful -light in weight

# 4 Twin

A YEAR in the hands of owners has proven the L-A Twin a remarkable achievement in the field of outboard motors.

board motors.

Combining the sturdiness and reliability for which all Lockwood-Ash motors are famous with an unprecidented lightness of weight, the L-A Twin has been accepted by boatmen, sportmen and resorters alike as the ideal all-around outboard power plant.

Complete, ready to operate, the L-A Twin weighs 52 lbs. yet it develops a full 3 H.P.—the lightest outboard motor of its power. Practically vibrationless, it runs hour after hour smoothly and sweetly and with remarkable quietness. To owners in all sections of the country the power and speed, the dependability and ease of operation of the L-A Twin have established this extraordinary motor in a class by itself.

#### A Wealth of Special Features

Many special features of proven merit add to the standing won for itself by the L-A Twin. It has the most powerful magneto in the outboard field; specially designed carburetor; rope and rudder steering (McNab-Kitchen rudder as an extra, if desred); indestructible gas tank; underwater parts made of non-corrosive aluminum alloy; quiet exhaust; Alemite lubrication. In material and workmanship it upholds to the fullest the Lockwood-Ash reputaton for reliability.

#### Propels a boat anywhere it will float

Literally opening new waters to outboard motoring, the L-A Twin has been a delightful surprise to its owners. It is absolute proof against damage from all under water obstacles—stones, sandbars, snags and deadheads. (No broken shear pins.) Automatic tilting of friction type protects the stern of the boat. The patented L-A Slipping Clutch Propeller protects not only the propeller blades but the motor itself.

#### New Season looks promising

The 1925 season promises to be the biggest outboard year the Lockwood-Ash Motor Co. has ever enjoyed. An especially attractive proposition is open to a few more dealers interested in handling this powerful, lightweight, tried and proven outboard engine. Write for complete information.

# COMPANY

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JACKSON, MICHIGAN

# Builders of Marine Engines for 20 Years

BROOKLYN. N. Y.: Hyde Boat & Engine Co., 356 Bergen St. at 4th Ave. NEW ORLEANS, LA.: Arthur Duvic's Sons, 122 Chartres St. PHILADELPHIA, PA.: Marine Engine Co. of Phila., Bourse Bldg. SEATTLE, WASH.: Pacific Marine Engine Company, 906 Western Ave. NORFOLK, VA.: Mianus Diesel Engine Co., 16 Boush St. NEWPORT ARK.: Henry M. Owen. FORT WORTH, TEX.: Veihl-Crawford Hardware Co. JACKSONVILLE, FLA.: Burroughs-McMeekin Co., 30 E.Bay St. MONTREAL, QUE., CAN.: F. I. Mitchell, 633 Notre Dame St., E. ST. LOUIS, MO.: Wm. Gross-mann, 1630 Pine St. HARBINGER, N.C.: R. L. Gallop Hdw. PORTLAND, ME.: Mianus Motor Sales Co., 19 Custom House Wharf. LOS ANGELES, CAL: V. L. Walker, 1635 Kenmore Ave. FACTORY REPRESENTATIVE FOR PACIFIC COAST: Gordon Snedskor, 1217 J. St., Sacramento, Cal. FOREIGN EXPORT OFFICE: 116 Broad St., New York, N. Y.. Harold Fee, Mgr.

#### America's Leading Marine Engine Builders

(Continued from page 244)

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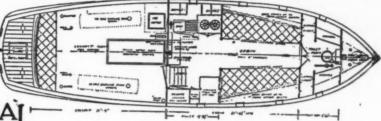


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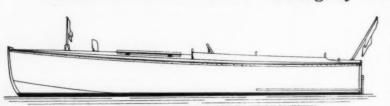
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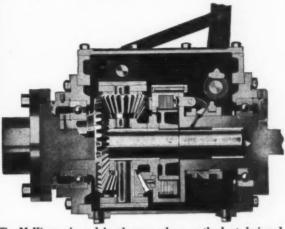
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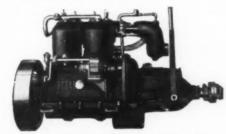
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# Skimmer, A 11/2 Liter Hydroplane

Clamp: This will be 1% by ¾-inch elm or oak, notched into frame heads, and fastened with two 1¾-inch number 8 brass screws on each frame. At the forward end it is to be secured by a 1-inch breast hook, and at the after end by two 1-inch oak knees.

Seam Battens: These will be of clear spruce ½ by 1¾ inches. These are to be properly notched into the bottom and side frames, and secured with 1¼-inch number 8 brass screws. The center lines for the side planking will be spaced as shown on the construction drawing. The seam battens for the bottom planking, four in number, and similar to the side battens, will be spaced equally on each side of the keel.

Engine Bearers: These will be of clear spruce sided inches, with the center lines of the bearers kept at a suitable distance each side of the center line of the boat to accommodate the particular engine which is to be installed. The engine

the particular engine which is to be installed. The engine bearers are to be through bolted to the side keelsons, the spacing of which must also be adjusted to accommodate the

Deck Beams: These will be of spruce 234 by 34 inches, those at stations 2, 3 and 12, may be left solid, while the remainder can be cut to a slight camber. As required in the way of the coaming, provide half beams as necessary. On the under side of the center seam batten, doubling pieces should be notched into the beam, and screwed to the batten for securing the cleat.

Coaming: These will be of 3%-inch selected mahogany, and are to stand about 1 inch above the top of the deck. A 3% by 7%-inch spruce batten is to be run, so as to form a carline, notched into the beams as necessary, so that the top edge will form a support for the deck planking. A 3% by %-inch carline to be run and notched into all beams to take the ends of deck planking.

planking.

Deck: Spruce battens 3% by 1½ inches are to be run as for planking, and the decks will be of 5/16-inch mahogany, screwed to these battens and beams. A rubbing strake of ¾-inch half round oak to be run at the deck level on the completion of the decking, and a rounded beading in mahogany to be secured on the deck against the coaming.

Floor Boards: These are to be of 5% by 1½-inch spruce, screwed to the frames. The center gangway in the after part may be supported on ½ by 5½-inch cross bearers, notched into and secured to the engine bearers.

Rudder Bearing: This is to be formed of 1 by 7-inch oak notched over and secured to the side keelsons, as shown on the plan.

Rudder: To be in accordance with the detailed drawing, and built up of a stock 1-inch diameter, and a 1/2-inch plate. These are to be of Tobin bronze. The rudder tube is also to be of Tank: Galvanized steel tank, 2 feet 6 inches by 9 inches

diameter, supported on spruce chocks and strapped down as

Seat: Batten seats formed of 11/2 by 7/8-inch mahogany, with

backrests, as shown.

Steering Wheel Support: To be formed in mahogany, 6 by 1 inch supported on a chock as shown, or it may be carried by a

Steering Wheel: A 15-inch wheel and steering gear of the drum type, with or without controls, as desired. Care should be taken that large-diameter sheaves are used where the steering

cable has to be turned.

Engine: The capacity of the engine to be restricted to come within the limits of the 1½ liter class.

within the limits of the 1½ liter class.

Propeller: A suitable propeller to be fitted of such diameter and pitch as may be specified by the makers to suit the particular engine which may be installed.

Propeller Shaft: The diameter of the Tobin bronze shaft will be as specified by the engine builders, 1-inch diameter being shown in the drawing.

Fittings: In the way of the seat, a small hand grip should be fitted at each side. A cleat and fairlead are arranged forward. All fittings, including the steering gear, bracket, etc., throughout the boat must be kept as light as possible, consis-

throughout the boat must be kept as light as possible, consistent with strength.

Varnish: The hull outside to be well rubbed down, all screw heads stopped, and to be finished with as smooth a surface as possible. The hull then to receive four coats of best yacht Cockpit Cover: At the forward end of the cockpit a canvas cover is to be fitted, so as to protect the engine from spray when the boat is travelling at high speed.

It will be seen from these specifications that all matters of importance have been dealt with in detail. Constructional features of a purely practical nature so far as the actual workman.

ures of a purely practical nature, so far as the actual workman-ship is concerned, have been omitted. To a large extent the drawings are self explanatory, but in the event that any readers who contemplate building the boat, meet with unexpected diffi-culties, the Editor will always be glad to assist any who require

#### How to Build a Marine Engine Supercharger (Continued from page 78)

shaft to make sure that they rotate in the same plane, and that

chain will run true.

the chain will run true.

Oiling is taken care of by an opening at the top of the gear casing. A small stream of oil is directed against the pinion gear, lubricating and cooling the gear drive. The oil spray thrown off from the gears furnishes sufficient lubrication for the ball and roller bearings. The oil is then drained from the bottom of the gear casing and is recirculated.

There are two ways in which the supercharger can be connected to the engine. If the installation is such that the supercharger outlet can be kept within three feet of the intake manifold, the carburetor should be connected to the supercharger inlet by a short piece of tubing. The supercharger outlet is conlet by a short piece of tubing. The supercharger outlet is connected to the intake manifold by two inch tubing which, at the engine end, is reduced to 1¼ inches diameter and a flange brazed on for attachment to the intake manifold. The engine is operated just as if there were no supercharger there, the carburetor throttle controlling the speed. As all the fuel mixture passes through the supercharger, the charge that is forced into the engine cylinders is thoroughly vaporized and will give remarkable smooth running. The propeller diameter or pitch will probably have to be increased to keep from excessive engine

If the supercharger must be over three feet from the intake manifold, the carburetor should be left in its present position, and the air from the supercharger lead to the carburetor as shown in one of the illustrations in the November issue. It will then be necessary to supply gasoline to the carburetor under

pressure.

To secure the best results at full throttle either Ethyl or Benzol gasoline should be used, as they permit higher compression pressures without detonation. Of course the engine should be free from carbon and in good mechanical condition to start with. If the supercharger is carefully made and assembled very materially increase the performance of the engine on which it is installed.

A Consolidation

As is well known, the Piston Ring Company of Muskegon, Mich. for many years have manufactured for the No-Leak-O Piston Ring Company, the No-Leak-O Piston rings. Beyond the actual manufacture of the rings, the two organizations have functioned on an entirely individual basis each concentrating in its own field. The organization which there is the company to the contract the contraction of the contract that the contract the contract t tis own field. The agreement under which these rings have been manufactured have expired, and the announcement of the consolidation of the two companies, has been made effective November 1. L. F. Iverson, Manager of the Service Division of The Piston Ring Company will continue with a general supervision of the service branch. While the No-Leak-O and Seal drain rings will be combined with quality Drainoil rings under the presequent of L. G. Motthews, who will be assisted. under the management of L. G. Matthews, who will be assisted by John E. Norwood, Jr.

A Surprise at the Show

The new Johnson Fisherman's special outboard engine, which is being shown for the first time at the Motor Boat Show, is a remarkable little single cylinder engine which weights only about 25 pounds. While it is not as powerful or speedy is a remarkable little single cylinder engine which weighs only about 25 pounds. While it is not as powerful or speedy as the larger Johnson Twin, it has ample power for the fisherman or canoeist, who must carry his engine, and to whom a question of weight is a matter of great importance. In addition to this brand new single cylinder engine, they will show their improved 1925 model of the standard Johnson Twin, whose power has been increased over the previous years model. This engine has now as standard equipment, the Johnson shock absorber drive, which prevents all damage from under water obstructions. It also carries the new super-power magneto, which gives a higher spark and quicker start than ever. ne ld ig

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Sabalo, owned by Van Lear Black, Baltimore, Md.



Cynthia, owned by Merrill B. Mills, New York

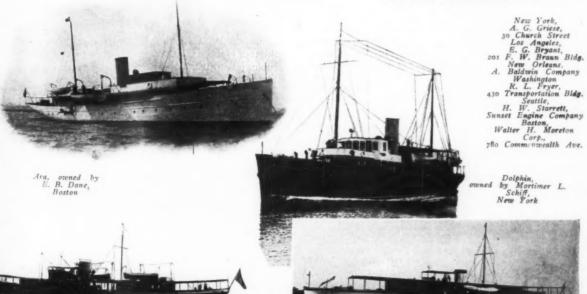


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N the operation of these Yachts, in severest weather, under all kinds of conditions, Winton Full Diesel Type Engines have proved their Economy, Reliability, and all-around Superior Performance. And because they continue, day after day, in actual service, to show convincingly their exceptional merit and excellence, they are preferred by yacht owners, marine architects, and engineers, who demand the most efficient type of marine propulsion.

Specifications and complete details gladly supplied upon request.

# WINTON ENGINE WORKS CLEVELAND, OHIO, U. S. A.



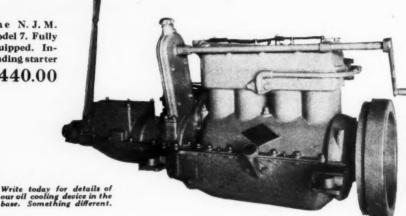
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NOTHING could be more exasperating or more inconvenient than to have an enjoyable cruise interrupted and delayed by engine trouble and have to wait many days for spare parts to come from some distant factory hundreds of miles away. That's when "A Feller Needs a Friend." Every Ford service station in every part of the world is a "friend" of every owner of a N.J.M. Model 7 marine engine. Our engineers in designing the N.J.M. made it possible and practical for all essential parts to be interchangeable with standard Ford parts. Produced on an enormous scale Ford parts are the lowest priced in the world, and are immediately available in any part of the world. This assures expert service through any of the Ford service stations promptly and economically to every N.J.M. owner.

The N. J. M. Model 7. Fully equipped. Including starter \$440.00



The N. J. M. Motor with Safety First Front Hand Starter. A very important and convenient feature when using the motor in a cabin cruiser or auxiliary sloop, where flywheel is half smaler the floor and the rear end of engine is under companionway. This starter is furnished without extra charge and in addition to usual rear starter.

In addition to the low maintenance cost the N.J.M. Model 7 has proven to be so economical in fuel consumption that the saving in gas compared with most engines of the same power will actually pay for the N.J.M. in one season.

There is a hot spot between the one-piece exhaust and intake manifold. The exhaust heats on metal on one side, and cool gases coming in on the other side reclaim heat

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The N.J.M. has extra large main bearings. enclosed reverse gear and many other advanced features many of which are exclusively of our design.

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You can purchase the N. J. M. on the Easy Payment Plan now. A small payment down and pay the balance in small monthly payments. Install your engine through the winter months and be ready to go in the spring. You won't feel the easy payments and you will enjoy your new motor next summer. It will help pay for itself in saving of gasoline and oil over your present outfit. Think this over. We are trying to help you and expect you to help yourselt when you get this opportunity.

Our plant runs on a full time basis to keep an adequate stock on hand to meet the demand for this popular type of engine.

Write, wire or phone today for full details about the wonderful little N.J.M. 7

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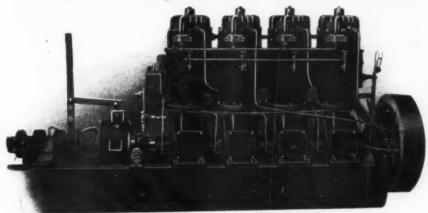
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The Remington powered motor ship "Solis" of Venezuela, S. A. This 120-foot heavy built commercial boat has been in constant service for the last eight years.

are without parallel in simplicity

#### SMALLEST SUCCESSFUL **OIL ENGINES**

As small as 31/2 H.P.—as large as 400 H.P.

THE REMINGTON, a unit oil engine built in many THE REMINGTON, a unit on engine or auxiliary sizes, is most economical for either main or auxiliary power. It is our belief that the care exercised in the manufacture of the Remington is not equalled in any other oil engine.

Remingtons were first built for industrial service and more than proved their worth as money makers in thisfield, where everything is reckoned in cold dollars and

The extremest simplicity marks their construction, nochains, gears, cams, poppett valves or electrical apparatus are used.

Their quiet and smooth performance is refreshing to the most critical and experienced engineer.

The following letter is typical of what all Remington users say:

DEPARTMENT OF COMMERCE, LIGHTHOUSE SERVICE

Fifth District Light Vessel No. 52 November 6th, 1924

The Remington Oil Engine Co., Keyport, N. J.

Dear Sirs:

In reply to your letter of October 30th, 1924 relating to the Remington Oil Engine No. 10 C 2 24 H.P. wherein you ask when this engine was installed, it ught Vessel No. 52 on February 10th, 1911 at Baltimore, Md. and has been in use ever since. I have been in charge of it all this time and can say it has given extra good service and is in serviceable condition at this date. I can recommend the Remington Oil Engine to be an extra good engine.

I would be pleased to have a parts catalogue for this engine.

Respectfully,
Signed—C. H. Johnson,
Engineer Light Vessel No. 52, Lewes, Delaware.

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# THE REMINGTON OIL ENGINE, Inc.

KEYPORT, NEW JERSEY

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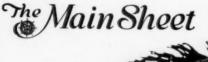
The bold bad West seems to have the edge on the East for agreeable surprises. These young ladies are simply demonstrating what is good form in dress. Their's of course is the lot of every pathfinder who introduces a new development. It may be that this introduction will be the more kindly received by virtue of its appeal to all lovers of fair play. We hope so.

One reason why we attach so much importance to this is the moral behind it. We feel that something quite untried is often worth investigating. Detroit Yacht Club's magazine has found a ready market for the bolder spirits who have ventured into its advertising columns. The reason is apparent. No one else reaches the largest collective group of buying yachtsmen in the world. Truly it's a field worth cultivating. Address inquiries to 3101 Woodward Ave., Detroit, Michigan.



You will admit that Cecille Evans' garb is comfortable for dancing!

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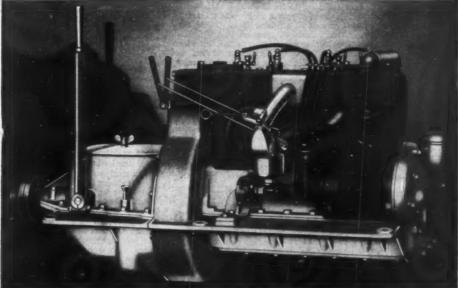


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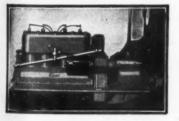
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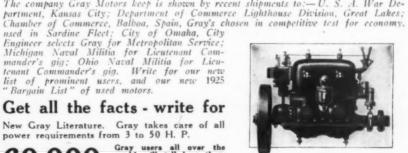
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GRAY MARINE MOTOR CO.,

6910 Lafayette Ave. East of Canton

Detroit, Mich., U. S. A.

#### Carl Fisher's One Design Class

(Continued from page 87)

He has financed the boats and is also putting cash prizes for the drivers. This purse will be up \$10,000 in cash prizes for the drivers. This purse will be divided with \$3,000 in awards for the six heats, and \$7,000 divided on a point basis at the end of the heat series.

This being the first race for this one-design class the race This being the first race for this one-design class the race committee and Mr. Fisher decided that it should be invitational, and confined to not more than 10 boats. Among the drivers invited to compete are: Barney Oldfield, Ralph DePalma, Tommy Milton, Earl P. Cooper, Bennett Hill, Harry Hartz, Peter DePaolo, Fred Comer and R. Clifford Durant. All of these men are famous in the annals of automobile speed histhese men are famous in the annals of automobile speed instory. Barney Oldfield drove racing cars in the days when their speeds were comparatively low, being the first man to ever do a mile a minute on a dirt track, piloting the famous 999 owned by Henry Ford to that record in Detroit, more than two decades ago. He is the only one of the drivers not now competing in major league automobile racing.

The drivers will make the jump from Los Angeles, their winter headquarters, to Miami Beach for the regatta and then return to Los Angeles for other competitions. They are all due in Miami Beach 72 hours before the regatta. They will draw for the boats and start practicing 48 hours before the race, or March 18. The boats will be ballasted so that there is not an ounce difference in weight, the Scripps engines will be tuned to the same r.p.m. and even the drivers will carry-weight so that the lighter man will have no advantage over his portly

adversary

Mr. Fisher has had a decade of experience with Miami regattas. He has been disappointed in the one-sided competitions and took this means to provide a real race series. He realizes and took this means to provide a real race series. He realizes that boats as a rule, are not evenly matched. He also knows that the majority of the yachtsmen go to Florida for a vacation and are not interested in competing for any sort of prizes. With this plan for the regatta he is assured of intense competition and that he will have a full field of 10 starters in every heat. The conduct of the race is in the hands of a committee of three. Charles F. Chapman, New York, is chairman, with W. D. Edenburn and Ned Purdy of Detroit as his aides.

Palm Beach Race to Be All-Star

Final entry lists are now open for the big Palm Beach Y. C. speed-boat regatta to be held February 23 and 24 in Lake Worth. The greatest interest is in the 151-cubic inch hydroplane event for cash prizes and the Royal Poinciana Trophy now held by Margaret III of Pekin, Ill. Margaret will again race for wargaret III of Pekin, III. Margaret will again face for the trophy, but this time under colors of the Palm Beach Y. C. The final entries follow:

Margaret III, Palm Beach Y. C., present holder of the Royal Poinciana Trophy and also holder of the World's competitive

speed record for her class.

Miss Quincy VII, a new and improved boat designed and

speed record for ner class.

Miss Quincy VII, a new and improved boat designed and built by C. E. Padgett of Quincy, Ill., and considerably faster than his former boat which broke the mile record for the class at last year's Palm Beach event.

Hadley-Plane, Broad Channel Y. C. of New York. Unofficially the fastest boat of her class in the world and officially the fastest in the East. Owned and driven by C. S. Hadley. Miss Meadowmere, Broad Channel Y. C., winner of the summer's events on Jamaica Bay. Owned and driven by Frank Ripp.

Myda, Broad Channel Y. C., present holder of the Hessler

Myda, Broad Channel Y. C., present holder of the Hessler Trophy representing the Atlantic Coast Championship. She will be driven by her owner, Otto Stoye.

E-Nee-Mo, Capital Y. C., Washington, D. C., the fastest boat on the Potomac and a successful competitor in the races last summer on Jamaica Bay. Mrs. J. G. Beard will act as mechanician for her husband in this speedster.

Greased Lightning is entered by Wm. McP. Bigelow of the Miles River Y. C. of Maryland. She is being built specially for the race by her owner who is well known as a racing enthusiast and a member of the R. C. R. C.

Kotick II, Philadelphia Y. C. Also a new boat, built specially for the race for George W. Helme who was bitten by the speed-boat bug while watching the races on Jamaica Bay last

speed-boat bug while watching the races on Jamaica Bay last summer.

summer.

All of the above boats will be equipped with Pierce-Budd 3-cylinder engines, and with the exception of Miss Quincy VII all are built from the plans of Margaret III although in two cases slight changes have been made in plane angularity.

The last entry is Speedifour, a new boat designed by Beauvais, built by Draeger and entered by John Termaat of the Oshkosh Power Boat Club, who has built a special high-speed Universal engine for this race. If this engine is successful in winning it will be the first time a Pierce-Budd has ever been heaten in the class. been beaten in the class.

#### What Is the Market for Used Boats?

(Continued from page 90)

houseboat, it invariably contains a fine big owners' stateroom nouseboat, it invariably contains a fine big owners stateroom with two regular beds and usually connects with a private bath. In addition to this we find a single stateroom with a single bed and a large dining room approximately  $10 \times 14$  feet. These quarters are usually located in the aft end of the boat with the crew, engine room and galley forward. Usually we find a large deck house approximately 16 feet long by about 10 feet wide. This is used as a drawing room or lounging and music room. Such a boat is also operated with a combination captain-engineer, a good handy man who acts as cook-steward and general utility man. Boats of this type range in price from \$12,000 to \$18,000.

Going into the somewhat larger size, we have the 60 to 65 toot houseboat with either single or twin engine. This boat invariably contains three staterooms, bathroom, extra toilet room, dining saloon and deck house, which can be used as a combined dining room and living room. The crew for a boat of this size runs from three or four men depending upon the amount of entertainment and service the owner desires. Boats of this size are generally offered between \$18,000 and \$25,000 in price.

In the 75 to 85 foot class we find these boats with four fine large staterooms furnished with regular beds. Two nicely fitted up bathrooms, deck house containing the dining room, and living room. This size boat can be operated with a crew running from five to seven men and it is possible to contains three staterooms, bathroom, extra toilet

crew running from five to seven men and it is possible to cruise the entire coast line, Long Island Sound, Canals and Great Lakes with such a boat. Boats of this type usually bring

between \$35,000 to \$60,000

The modern yacht broker is so equipped with a general line of information obtained by personal examination of the various boats regarding their condition and is prepared with detailed information such as interior and exterior photographs, full particulars regarding sizes and the general equipment used on them and plans containing their cabin arrangements so as to be able to supply this information on a moment's notice to any inquirers. This information is constantly kept up to date; locations of the various boats are noted continually and in this way they are able to handle inquiries whether they come from the Pacific Coast, the Middle West, Maine, Florida

The Yacht brokers office does more than the mere negotiating of sale or charter. They are prepared to furnish on comparatively short notice experienced captains, engineers, and training they are prepared to undertake the fitting out and commissioning of yachts, obtain crews and co-operating with them in placing yachts in condition for use by their

respective owners.

#### A New Booklet

The Regal Gasoline Engine Company of Coldwater, Mich. The Regal Gasoline Engine Company of Coldwater, Mich. have recently distributed copies of a very complete condensed catalog, which describes with great detail all of the twenty different models of engines built by this company. These range in size from a little single cylinder machine of 2 h.p., and weighing only 130 pounds, up to a large eight cylinder machine of 100 h.p. and weighing 8,600 pounds. Between these extremes will be found every conceivable and desirable engine size. This little booklet is well worth adding to every yachtsman's collection, and the Regal Company will be glad to send copies to all who are interested.

#### Evinrude Does Rescue Work

How an Evinrude Motor played a significant part in rescuing stricken people in a flooded area and saving a great deal of property is told by Norberto Paramo E. Hijos, Mexican agent

property is told by Norberto Paramo E. Hijos, Mexican agent at Morelia, Mexico, in a recent letter.

"About the middle of last month," the letter states, "a river, running close to this city left its course, flooding a great area and endangering a large part of the city. We took advantage of this circumstance to aid the people damaged by the flood, as well as to demonstrate practically the efficiency of the Evinrude motor and to that effect we put one in a large barge and transported from the flooded place to the shore persons and merchandise. We had great success in our efforts, and in spite of the defective and awkward form of the barge, the trips were made with great facility and speed. These practical were made with great facility and speed. These practical demonstrations were witnessed by a large public to the great credit of the Evinrude name and as a result, we have several sales pending.

# NOW A New 35' RED BANK 35'



# Thirty Six Miles Per Hour

The latest of the popular line of Red Bank cruisers, a 35 footer with an 8 ft. beam, represents a distinct radical change in boat construction. A change that increases seaworthiness and lends itself nicely to speed. It has a double planked Vee bottom hull with lapstrake type planking from chine to rail.

This boat is built especially for service where extreme speed and large carrying capacity is essential, Regular equipment includes 400 H. P. Liberty Engine converted for salt water use and gives a guaranteed speed of 36 miles per hour.

Price and further particulars on request.

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  - Volume VII BUILD A BOAT, by John L. Hacker and Charles D. Mower
  - Volume VIII AMERICAN AND FOREIGN YACHT CLUB FLAGS
    - A new book just out showing in color flags of over 1,000 American and Foreign Yacht Clubs, flags in color of the Maritime Nations of the World, the International Code, Weather and Storm Signals, the Yacht Club Signal Code and several chapters on Yachting Etiquette, the Proper Flags to Fly, etc.

The Design Books of the Ideal Series all contain complete plans of cruisers, runabouts, auxiliaries, etc. The drawings are all large and reproduced to scale. In many instances, large blue prints accompany the descriptions. All plans are in detail enough to permit building from direct, either by the amateur or professional builder. No part of the boat's design or construction has been omitted. In addition to the plans, there is a description of each boat with many How-to-Build hints. Complete specifications accompany each plan.

See list of contents and description of Yachtsman's Guide elsewhere in this issue.

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Cook County Sales	4 MODECE P.	Roberts Motors
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#### Here is what Arthur T. Vance, New York, editor of the Pictorial Review, says about the Kohler Automatic

Kohler Co., Kohler, Wis.

Gentlemen:

The writing of testimonials is a bit out of my line, but I am so enthusi-The writing of testimonians is a bit out of my inne, dut I am so entinus-astic about my Kohler Automatic Electric Lighting System which has been in use on my little yacht. Pandora III, for two years, that I feel I must tell you how well satisfied I am with it. I had fooled around with different low voltage lighting sets for years and never had any satisfac-tion. When I really got where I wanted light, something happened to the storage batteries or something else went wrong. Since I have had the Kohler plant with the 110-volt output I have had no trouble at all.

Nothing has been done to it except to grind the valves. It runs just as easily and as merrily now as it did two years ago.

Into only get my lights from this Kohler plant, but I pump the bilge, fill my whistle tank, supply water for my fire hose, have a vacuum cleaner, an electric cooking outfit, an electric flatiron, an electric beating outfit, an electric grill, an electric buffing machine which comes in handy keeping the brass clean—in fact, any electrical device you use in your home, you can use on your boat. I feel my lighting troubles, as far as the boat is concerned, are at an end.

Sincerely

Sincerely.



PANDORA III, flagship, Port W ashington Yacht Club; Commodore Arthur T. Vance, o

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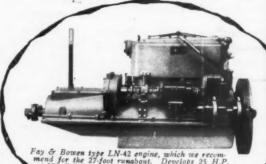
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